EXTENSION OF PURCHASE PROGRAMS OF STRATEGIC AND CRITICAL MINERALS

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HEARINGS

BEFORE THE

SUBCOMMITTEE ON MINERALS, MATERIALS, AND FUELS

OF THE

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS UNITED STATES SENATE

EIGHTY-FOURTH CONGRESS

SECOND SESSION

ON

S. 2876, S. 3453, S. 3379, S. 3455, S. 3485, S. 3486, S. 3496, S. 3497, S. 3499, S. 3504, S. 3523, S. 3636, S. 3764

BILLS TO ENCOURAGE THE DISCOVERY, DEVELOPMENT, AND PRODUCTION OF TUNGSTEN, MANGANESE, CHROMITE, MICA, ASBESTOS, BERYL, COLUMBIUM-TANTALUM-BEARING ORE OR CONCENTRATE, ANTIMONY, MERCURY, AND FLUORSPAR IN THE UNITED STATES, ITS TERRITORIES AND POSSESSIONS

APRIL 19, 20, 21, 25, MAY 16, 24, AND 25, 1956

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EXTENSION OF PURCHASE PROGRAMS OF STRATEGIC AND CRITICAL MINERALS

TUESDAY, APRIL 19, 1956

UNITED STATES SENATE,
SUBCOMMITTEE ON MINERALS, MATERIALS AND FUELS,
OF THE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D. C.

The Subcommittee met, pursuant to call, at 10 a. m., in room 224, Senate Office Building, Senator James E. Murray, of Montana (chairman of the full committee) presiding.

Present: Senators James E. Murray, Montana; Alan Bible, Nevada; George W. Malone, Nevada; Henry C. Dworshak, Idaho; Frank A. Barrett, Wyoming, and Barry Goldwater, Arizona.

Present also: William H. Coburn, committee counsel; Robert W. Redwine, assistant counsel, and George B. Holderer, committee engineer.

The CHAIRMAN. The hearing will come to order, please.

The hearing will be devoted to a number of bills with bipartisan sponsorship designed to expand and strengthen the domestic production of tungsten, manganese, chromite, mica, asbestos, beryl, columbium-tantalum, antimony, and mercury.

(The bills referred to, S. 3497, S. 3496, S. 3504, S. 3455, S. 3485, S. 3486, S. 3379, S. 3499, S. 3523, S. 2876, and S. 3453, are as follows:)

[S. 3497, 84th Cong., 2d sess.]

A BILL To encourage the discovery, development, and production of mercury in the United States, its Territories, and possessions, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Domestic Mercury Program Extension Act of 1956".

SEC. 2. It is hereby recognized that the continued dependence on overseas sources of supply for mercury during periods of threatening world conflict or of political instability within those nations controlling the sources of supply of such material gravely endangers the present and future economy and security of the United States. It is therefore declared to be the policy of the Congress that each department and agency of the Federal Government charged with responsibilities concerning the discovery, development, production, and acquisition of mercury shall undertake to decrease further and to eliminate where possible the dependency of the United States on overseas sources of supply of such material.

SEC. 3. In carrying out the declaration of policy set forth in section 2 of this Act—

(1) the termination date of the purchase program designed to stimulate the domestic production of mercury and established by regulations issued pursuant to the Defense Production Act of 1950, as amended, and/or the Critical Materials Stockpiling Act of 1946, and amendments thereto (hereinafter in this section referred to as "purchase programs"), shall be extended to the close of June 30, 1961, or until a total of not less than one

hundred and twenty-five thousand seventy-six pound flasks of mercury produced domestically shall have been acquired, except that all purchases subsequent to the date of enactment of this Act shall be at a price of not less than $275 per seventy-six pound flask; and

(2) nothing contained in paragraph (1) above shall be construed to limit or restrict the officer or agency of the United States administering the mercury purchase program from extending the termination dates provided for by paragraph (1) or from changing specifications or price schedules, except no such change shall be on terms less favorable to the producer than those specifications in effect on January 1, 1956, and the price set forth herein.

SEC. 4. In order that those persons who produce or plan to produce under purchase programs established pursuant to this Act may be in position to plan their investment and production with due regard to requirements, the officer or agency of the United States administering the purchase programs for domestic mercury shall publish at the end of each calendar quarter the amount of mercury purchased during that quarter and the cumlative total amount of such purchases.

[S. 3496, 84th Cong., 2d sess.]

A BILL To encourage the discovery, development, and production of antimony in the United States, its Territories, and possessions, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Domestic Antimony Purchase Program Act of 1956".

SEC. 2. It is hereby recognized that the continued dependence on overseas sources of supply for antimony during periods of threatening world conflict or of political instability within those nations controlling the sources of supply of such material gravely endangers the present and future economy and security of the United States. It is therefore declared to be the policy of the Congress that each department and agency of the Federal Government charged with the responsibilities concerning the discovery, development, production, and acquisition of strategic and critical minerals and metals shall undertake to decrease further and to eliminate where possible the dependence of the United States on overseas sources of supply of antimony.

SEC. 3. In carrying out the declaration of policy set forth in section 2 of this Act—

(1) the termination date of all purchase programs designed to stimulate the domestic production of chromite and established by regulations issued pursuant to the Defense Production Act of 1950, as amended, and/or the Critical Materials Stockpiling Act of 1946, and amendments thereto (hereinafter in this section referred to as "purchase programs"), shall be extended to the close of June 30, 1961;

(2) nothing contained in paragraph (1) above shall be construed to limit or restrict the officer or agency of the United States administering the chromite purchase program from extending the termination dates provided for by paragraph (1) or from changing specifications or price schedules, except no such change shall be on terms less favorable to the producer than those specifications and price schedules which were in effect on January 1, 1956.

SEC. 4. In order that those persons who produce or plan to produce under purchase programs established pursuant to this Act may be in position to plan their investment and production with due regard to requirements, the officer or agency of the United States administering the purchase program for domestic chromite shall publish at the end of each calendar quarter the amount of chromite purchased during that quarter and the cumulative total amount of such purchases.

[S. 3504, 84th Cong., 2d sess.]

A BILL To encourage the discovery, development, and production of chromite in the United States, its Territories, and possessions, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Domestic Chromite Program Extension Act of 1956".

SEC. 2. It is hereby recognized that the continued dependence on overseas sources of supply for chromite during periods of threatening world conflict or of political instability within those nations controlling the sources of supply of such material gravely endangers the present and future economy and security of the United States. It is therefore declared to be the policy of the Congress that each department and agency of the Federal Government charged with the responsibilities concerning the discovery, development, production, and acquisition of chromite shall undertake to decrease further and to eliminate where possible the dependency of the United States on overseas sources of supply of such material.

SEC. 3. In carrying out the declaration of policy set forth in section 2 of this Act—

(1) the Administrator of the General Services Administration is hereby authorized and directed to set up through the facilities of the Emergency Procurement Service a domestic antimony purchase program for the purchase by that agency of ten thousand short tons of domestically produced metallic antimony and/or antimony oxide with such purchase program continuing until June 30, 1961, or until an aggregate of ten thousand tons of such materials has been acquired hereunder, whichever comes first, for disposal to the national stockpile or resale to industry, whichever in the opinion of the Administrator would be of the most service to the national defense or the national economy.

(2) in acquiring the aforementioned metallic antimony and/or antimony oxide, the said Emergency Procurement Service shall pay for such material not less than 55 cents per pound for metallic antimony and 50 cents per pound for antimony oxide.

SEC. 4. There are hereby authorized to be appropriated such sums as may be necessary to carry out the purposes of this Act.

[S. 3455, 84th Cong., 2d sess.]

A BILL To encourage the discovery, development, and production of mica in the United States, its Territories, and possessions, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Domestic Mica Program Extension Act of 1956".

SEC. 2. It is hereby recognized that the continued dependence on overseas sources of supply for mica during periods of threatening world conflict or of political instability within those nations controlling the source of supply of such material gravely endangers the present and future economy and security of the United States. It is therefore declared to be the policy of the Congress that each department and agency of the Federal Government charged with responsibilities concerning the discovery, development, production, and acquisition of mica shall undertake to decrease further and to eliminate where possible the dependency of the United States on overseas sources of supply of such material.

SEC. 3. (a) In carrying out the declaration of policy set forth in section 2 of this Act—

(1) the termination date of all purchase programs designed to stimulate the domestic production of mica and established by regulations issued pursuant to the Defense Production Act of 1950, as amended, and/or the current Critical Materials Stockpiling Act of 1946, and mendments thereto (hereinafter in this section referred to as "purchase programs"), shall be extended to the close of June 30, 1961;

(2) nothing contained in paragraph (1) above shall be construed to limit or restrict the officer or agency of the United States administering the mica purchase program from extending the termination dates provided for by paragraph (1) of subsection (a) or from changing specifications or price schedules, except no such change shall be on terms less favorable to the producer than those specifications and price schedules which were in effect on January 1, 1956.

SEC. 4. In order that those persons who produce or plan to produce under purchase programs established pursuant to this Act may be in position to plan their investment and production with due regard to requirements, the officer or agency of the United States administering the purchase programs for domestic mica shall publish at the end of each calendar quarter the amount of mica purchased during that quarter and the cumulative total amount of such purchases.

[S. 3485, 84th Cong., 2d sess.]

A BILL To encourage the discovery, development, and production of columbium-tantalum bearing ores and concentrates in the United States, its Territories, and possessions, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Domestic Columbium-Tantalum Bearing Ores and Concentrates Program Extension Act of 1956".

SEC. 2. It is hereby recognized that the continued dependence on overseas sources of supply for columbium-tantalum bearing ores and concentrates during periods of threatening world conflict or of political instability within those nations controlling the sources of supply of such material gravely endangers the present and future economy and security of the United States. It is therefore declared to be the policy of the Congress that each department and agency of the Federal Government charged with responsibilities concerning the discovery, development, production, and acquisition of columbium-tantalum bearing ores and concentrates shall undertake to decrease further and to eliminate where possible the dependency of the United States on overseas sources of supply of such material.

SEC. 3. In carrying out the declaration of policy set forth in section 2 of this Act the termination date of all purchase programs designed to stimulate the domestic production of columbium-tantalum bearing ores and concentrates and established by regulations issued pursuant to the Defense Production Act of 1950, as amended, and/or the Critical Materials Stockpiling Act of 1946, and amendments thereto (hereinafter in this section referred to as "purchase programs"), shall be extended to the close of June 30, 1961.

(b) Nothing contained in the above paragraph shall be construed to limit or restrict the officer or agency of the United States administering the columbium-tantalum bearing ores and concentrates purchase programs from extending the termination dates provided for by subsection (a) or from changing specifications or price schedules, except no such change shall be on terms less favorable to the producer than those specifications and price schedules which were in effect on January 1, 1956: *Provided, however*, That the extended termination date provided for in section 3, subsection (a) shall not apply to the purchase of columbium-tantalum bearing ores and concentrates of foreign origin.

SEC. 4. In order that those persons who produce or plan to produce under purchase programs established pursuant to this Act may be in position to plan their investment and production with due regard to requirements, the officer or agency of the United States administering the purchase programs for domestic columbium-tantalum bearing ores and concentrates shall publish at the end of each calendar quarter the amount of columbium-tantalum bearing ores and concentrates purchased during that quarter and the cumulative total amount of such purchases.

[S. 3486, 84th Cong., 2d sess.]

A BILL To encourage the discovery, development, and production of beryl in the United States, its Territories, and possessions, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Domestic Beryl Program Extension Act of 1956".

SEC. 2. It is hereby recognized that the continued dependence on overseas sources of supply for beryl during periods of threatening world conflict or of political instability within those nations controlling the sources of supply of such material gravely endangers the present and future economy and security of the United States. It is therefore declared to be the policy of the Congress that each department and agency of the Federal Government charged with responsibilities concerning the discovery, development, production, and acquisition of beryl shall undertake to decrease further and to eliminate where possible the dependency of the United States on overseas sources of supply of such material.

SEC. 3. In carrying out the declaration of policy set forth in section 2 of this Act—

(1) the termination date of all purchase programs designed to stimulate the domestic production of beryl and established by regulations issued pursuant to the Defense Production Act of 1950, as amended, and/or the Critical

Materials Stockpiling Act of 1946, and amendments thereto (hereinafter in this section referred to as "purchase programs"), shall be extended to the close of June 30, 1961; and the provisions under such programs shall be continued until such termination date in such quantities as may be offered; and

(2) nothing contained in paragraph (1) above shall be construed to limit or restrict the officer or agency of the United States administering the beryl purchase programs from extending the termination dates provided for by paragraph (1) or from changing specifications or price schedules, except no such change shall be on terms less favorable to the producer than those specifications and price schedules which were in effect on January 1, 1956.

SEC. 4. In order that those persons who produce or plan to produce under purchase programs established pursuant to this Act may be in position to plan their investment and production with due regard to requirements, the officer or agency of the United States administering the purchase programs for domestic beryl shall publish at the end of each calendar quarter the amount of beryl purchased during that quarter and the cumulative total amount of such purchases.

[S. 3379, 84th Cong., 2d sess.]

A BILL To provide for the maintenance of essential production of tungsten ores and concentrates in the United States, its Territories, and possessions, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Domestic Tungsten Production and Purchase Act of 1956."

SEC. 2. It is hereby recognized that adequate supplies of tungsten are necessary to the economy and security of the United States and can be assured only by continuance of production of this strategic metal from mines located within the United States, its Territories, and possessions, and that unless some immediate action is taken to sustain production the presently producing mines will close and either be destroyed or rendered incapable of being reopened except at extremely high cost, upon termination of the tungsten purchase program established pursuant to the Defense Production Act of 1950, as amended. It is therefore declared to be the policy of Congress to assure the continuance of production of tungsten ores and concentrates from mines within the United States, its Territories, and possessions, and to minimize the dependency of the United States on overseas sources of supply of this material.

SEC. 3. In accordance with the declaration of policy set forth in section 2 of this Act, the General Services Administration, after advising with the Bureau of Mines of the Department of the Interior, shall, immediately following the expiration of the present domestic tungsten purchase program, establish and maintain a new program to purchase not more than three million short ton units of tungsten ores and concentrates over the period ending June 30, 1959, produced from mines located within the United States, its Territories, and possessions. Purchases shall be made at prices not less than and on specifications not more strict than those fixed by the General Services Administration in the domestic tungsten purchase program in effect on January 1, 1956. The material shall be held by the General Services Administration in inventory to be turned over to the strategic stockpile if required for that purpose or, in the event that the material is not required for the strategic stockpile, it may be resold to industry for use within the United States: *Provided*, That no sale shall be made by the General Services Administration for industrial purposes at a price less than the cost of acquisition.

SEC. 4. There are hereby authorized to be appropriated, out of any moneys in the Treasury not otherwise appropriated, such sums as may be necessary to carry out the provisions of this Act.

[S. 3499, 84th Cong., 2d sess.]

A BILL To encourage the discovery, development, and production of nonferrous chrysotile asbestos in the United States, its Territories, and possessions, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Domestic Nonferrous Chrysotile Asbestos Program Extension Act of 1956."

SEC. 2. It is hereby recognized that the continued dependence on overseas sources of supply for nonferrous chrysotile asbestos during periods of threatening world conflict or of political instability within those nations controlling the sources of supply of such material gravely endangers the present and future economy and security of the United States. It is therefore declared to be the policy of the Congress that each department and agency of the Federal Government charged with responsibilities concerning the discovery, development, production, and acquisition of nonferrous chrysotile asbestos shall undertake to decrease further and to eliminate where possible the dependency of the United States on oversea sources of supply of such material.

SEC. 3. In carrying out the declaration of policy set forth in section 2 of this Act—

(1) the termination date of all purchase programs designed to stimulate the domestic production of nonferrous chrysotile asbestos and established by regulations issued pursuant to the Defense Production Act of 1950, as amended, and/or the Critical Materials Stockpiling Act of 1946, and amendments thereto (hereinafter in this section referred to as "purchase programs"), shall be extended to the close of June 30, 1961, or when deliveries under this program total in the aggregate 5,000 short tons of Crude No. 1 and/or Crude No. 2, whichever event first occurs: *And provided further*, That

(2) Crude No. 3 nonferrous chrysotile asbestos, as defined under existing General Services Administration regulations and specifications, shall be purchased only when offered with Crude No. 1 or Crude No. 2, or both, at a ratio of not in excess of 1 to 1; and

(3) nothing contained in paragraph (1) and (2) above shall be construed to limit or restrict the officer or agency of the United States administering the nonferrous chrysotile asbestos purchase program from extending the termination dates provided for by paragraph (1) or from changing specifications or price schedules now existing and/or amended by paragraph (2) above except no such change shall be on terms less favorable to the producer than those specifications and price schedules which were in effect on January 1, 1956.

SEC. 4. In order that those persons who produce or plan to produce under purchase programs established pursuant to this Act may be in position to plan their investment and production with due regard to requirements, the officer or agency of the United States administering the purchase programs for domestic nonferrous chrysotile asbestos shall publish at the end of each calendar quarter the amount of nonferrous chrysotile asbestos purchased during that quarter and the cumulative total amount of such purchases.

[S. 3523, 84th Cong., 2d sess.]

A BILL To encourage the discovery, development, and production of manganese-bearing ores and concentrates in the United States, its Territories, and possessions, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Domestic Manganese Program Extension Act of 1956".

SEC. 2. It is hereby recognized that the continued dependence on overseas sources of supply for manganese minerals and metals during periods of threatening world conflict or a political instability within those nations controlling the sources of supply of such materials gravely endangers the present and future economy and security of the United States. It is therefore declared to be the policy of the Congress that each department and agency of the Federal Government charged with responsibilities concerning the discovery, development, production, and acquisition of manganese minerals and metals shall undertake to decrease further and to eliminate where possible the dependency of the United States on overseas sources of supply of such material.

SEC. 3. (a) In carrying out the declaration of policy set forth in section 2 of this Act—

(1) the termination dates of all purchase programs designed to stimulate the domestic production of manganese-bearing ores and concentrates and established by regulaitons issued pursued to the Defense Production Act of 1950, as amended (hereinafter in this section referred to as "purchase programs"), shall be extended to the close of June 30, 1961;

(2) the quantity of manganese that may be delivered and shall be accepted under the program to encourage expansion of domestic production of manganese by providing a uniform price scale for small domestic producers of metallurgical grade manganese ores and concentrates shall be increased from nineteen million long dry ton units of manganese to fifty million long dry ton units of manganese. The ten thousand long dry tons limitation under such program shall be eliminated, but no manganese ore or concentrates shall be eligible for delivery under such program from any mine which had an actual production of more than ten thousand long tons of ore containing 40 per centum or more metallic manganese (by weight, dry basis) during the calendar year 1954;

(3) the quantity of manganese that may be delivered and shall be accepted under purchase programs for domestic manganese ore (other than the program referred to in paragraph (1)) shall be increased from eighteen million long-ton units of manganese to seventy-eight million long-ton units of manganese. The seventy-eight million long-ton units shall be allocated as follows:

(A) Twelve million units shall be allocated to the purchase program for domestic manganese ore at Wenden, Arizona.

(B) Twelve million units shall be allocated to the purchase program for domestic manganese ore at Deming, New Mexico.

(C) Twelve million units shall be allocated to the purchase program for domestic manganese ore at Butte and Philipsburg, Montana.

(D) Twelve million units shall be allocated to a purchase program for domestic manganese ore which shall be established for the Ozark-Cushman area.

(E) Twelve million units shall be allocated to a purchase program for domestic manganese ore which shall be established for the southern Appalachian area.

(F) Eighteen million units shall be allocated, at such times, in such amounts, and to such other purchase programs for domestic manganese ore as the officer or agency of the United States administering the purchase programs for domestic manganese ore deems appropriate to carry out the policy set forth in section 2 of this Act should sufficient suitable manganese ore become available in other areas in the United States.

Purchase depots to carry out the programs required by subparagraphs (D) and (E) shall be established in the Ozark-Cushman and southern Appalachian areas at places designated by the Administrator of General Services;

(4) except as otherwise provided for by this Act, existing prices, chemical and physical requirements, and other conditions for the purchase of manganese ores and concentrates under existing purchasing programs shall be continued in effect under the programs established, and under the programs enlarged and extended, pursuant to this Act; and

(5) the price for manganese ores to be delivered under the purchase programs established pursuant to this Act shall be the same as provided in the existing purchase programs for domestic manganese ore at Deming, New Mexico, and the existing purchase program for domestic manganese ore at Wenden, Arizona.

(b) (1) Notwithstanding paragraph (4) of subsection (a), the officer or agency of the United States administering the purchase programs for domestic manganese ore may relaxe the chemical and physical requirements and other conditions prescribed in such programs in order to further stimulated and encourage increased domestic production of manganese-bearing ores and concentrates.

(2) Nothing in subsection (a) of this section shall be construed to limit or restrict the officer or agency of the United States administering the purchase programs for domestic manganese ore from extending the termination dates provided for by paragraph (1) of subsection (a) or from increasing the quantity limitations provided for by paragraphs (2) and (3) of subsection (a).

SEC. 4. In order that those persons who produce or plan to produce under purchase programs established pursuant to the Defense Production Act of 1950, as amended, may be in position to plan their investment and production with due regard to requirements, the officer or agency of the United States administering the purchase programs for domestic manganese ore shall publish at the end of each calendar quarter the amounts of ores and concentrates purchased during that quarter under each program and the total amounts of such purchases under each program.

[S. 2876, 84th Cong., 2d sess.]

A BILL To amend the Domestic Minerals Program Extension Act of 1953 in order to strengthen the national defense and to further extend the program to encourage the discovery, development, and production of certain domestic minerals

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Domestice Minerals Program Extension Act of 1956".

SEC. 2. Section 3 of the Domestic Minerals Program Extension Act of 1953 (67 Stat. 417), is amended to read as follows:

"SEC. 3.. In accordance with the declaration of policy set forth in section 2 of this Act, the termination dates of all purchase programs designed to stimulate the domestic production of tungsten, manganese, chromite, mica, asbestos, beryl, and columbium-tantalum-bearing ores and concentrates and established by regulations issued pursuant to the Defense Production Act of 1950, as amended, shall each be extended (1) an additional five years beyond the termination date of such program under the extension provided for in accordance with the provisions of this act prior to its amendment by the Domestic Minerals Program Extension Act of 1956, or (2) until such time prior to the termination of such five-year extension if and when there have been purchases under such extension equal in quantity to the purchases under such program prior to its extension under such Act of 1956: *Provided*, That this sections not intended and shall not be construed to limit or restrict the regulatory agencies from increasing the quantity of materials that may be delivered and accepted under such program as permitted by existing statutory authority: *Provided futher*, That the extended termination date provided by this section for such critical materials purchase program shall not apply to the purchase of ores and concentrates of foreign origin."

[S. 3453, 84th Cong., 2d sess.]

A BILL To transfer certain Government-owned manganese ore facilities to the Secretary of the Interior, to provide for the erection of one or more beneficiation plants to treat manganese ores, to stimulate the production of certain strategic and critical minerals, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) the Government-owned manganese ore-purchasing depots (including facilities for sampling and storing manganese ores) at Wenden, Arizona, and Deming, New Mexico, and Butte-Phillipsburg, Montana, are hereby transferred to the Secretary of the Interior (hereinafter referred to as the "Secretary"), together with title to such ores as may be stored at such depots on the date of enactment of this Act. The Secretary shall continue, or, if necessary, reestablish at such depots a manganese ore purchase program in accordance with specifications, and at prices and under regulations not less favorable to the producer than those which were in effect at the Wenden depot on January 1, 1955, and, in the case of rhodochrosite ores, not less favorable than those regulations which were in effect in Butte-Phillipsburg on January 1, 1955.

(b) Within ninety days after the date of enactment of this Act, the Secretary shall establish two new manganese ore-purchasing depots at such places as he shall determine; except that one such depot shall be situated so as to serve the Ozark-Cushman area, and one such depot shall be situated so as to serve the southern Appalachian area. Managanese ores shall be purchased at such new depots upon their establishment by the Secretary, and the prices, specifications, and regulations applicable to such purchases shall be not less favorable than those in effect at the depots referred to in subsection (a) of this section.

(c) Within one year after the date of enactment of this Act, if in the opinion of the Secretary, economically and geographically feasible private facilities for the beneficiation of manganese ores are not then available or under construction, the Secretary shall begin the construction of one or more benefication plants in the most economic location or locations to treat manganese ores which are in storage in Government-owned depots, or which are hereafter purchased at such depots. Any such plant or plants shall be designed to make products suitable for stockpiling, or for sale on the open market. The proceeds from the sale, or credits arising from the transfer to the national stockpile, of managanese ores which have been treated at any such plant or plants shall be credited to the General Services Administration, less reasonable administrative and op-

erating expenses, until such time as such Administration has been recompensed for the manganese ores and depots (including facilities for sampling and storing manganese ores) which were in its possession at the time of the transfer thereof to the Secretary under the provisions of this Act.

(d) The Secretary is further authorized to sell any depot (including facilities for sampling and storing manganese ores) or any plant constructed under subsection (c) of this Act whenever in his opinion he can do so under terms and conditions which will provide adequate compensation therefor, and which will insure that such plant or depot (including facilities for sampling and storing manganese ores) will continue to be used for the purpose for which it was constructed. In the event that all the plants constructed under subsection (c) are sold as herein provided, the Secretary shall discontinue any manganese ore-purchase program which was established or continued under this Act, if he shall determine (1) that as a result of the sale of such plants there exists an adequate private market for manganese ores of the type purchasable under such program, and (2) that such action is in the public interest.

SEC. 2. (a) The Secretary is further authorized and directed to provide for the payment of a production bonus to any producer of tungsten, manganese, chromite, mica, asbestos, beryl, or columbium-tantalum-bearing ore or concentrate if (1) such ore, or concentrate was mined in the United States, its Territories or possessions, and (2) at the time of such payment purchases of such ore or concentrate by any department or agency of the United States under any purchase program established or continued pursuant to the Critical Materials Stockpiling Act of 1946 and amendments thereto, the Defense Production Act of 1950 with amendments thereto, the Domestic Minerals Program Extension Act of 1953, or, in the case of manganese, the first section of this Act, have terminated. Any such production bonus shall be paid, under regulations to be prescribed by the Secretary, to any such producer within 30 days after the submission to the Secretary of satisfactory evidence of the sale of such ore or concentrate on the open market at a price not less than the then current market price, and the price actually obtained therefor.

(b) The amount of any production bonus to be paid to the producer of any ore or concentrate under this Act shall be a sum equal to the amount by which the price, which would have been payable by the United States for such ore or concentrate immediately prior to the termination of the purchase program established for such ore or concentrate, exceeded the price actually obtained for such ore or concentrate by such producer on the open market.

SEC. 3. The provisions of this Act shall be administered by the Secretary of the Interior through a Strategic and Critical Minerals Production Administration to be established by the Secretary within the Department of the Interior.

SEC. 4. There are hereby authorized to be appropriated such sums as may be necessary to carry out the purposes of this Act.

SEC. 5. This Act and all authority conferred thereunder shall terminate at the close of June 30, 1961.

The CHAIRMAN. In the 1st session of the 84th Congress we passed H. R. 6373, which would have extended the life of Public Law 206, 83d Congress.

Unfortunately, the President saw fit to veto this bill, which affected the first seven of the minerals I have just mentioned. Some of the programs already have expired due to this veto, and others are fast closing.

For example, the tungsten purchase program will end in June of this year, thus shutting down practically every tungsten mine in the United States.

Due to the fact that there has been testimony from the interested agencies in the past that each mineral should be treated separately, each mineral has been made the subject of a separate bill. All but antimony and mercury are or have been included in Office of Defense Mobilization purchase programs. Antimony would be a new purchase program and the bill pertaining to mercury would merely place a more realistic floor price under the present mercury purchase program.

The Malone-Barrett bill S. 2876, is essentially the same as H. R. 6373 of last year.

In order to propose a program radically different from H. R. 6373 of last year, I have, together with 10 other Democratic Senators and 12 Republican Senators, introduced S. 3453, a bill which would take the burden of aiding the domestic and critical mineral industry completely out of the hands of the Offiec of Defense Mobilization and place it in the hands of the Department of the Interior.

This is a "bonus" bill—frankly, a subsidy bill, patterned after the bill the President already has signed into law, to help the domestic production of that strategic material, wool, which was declining due to cheap foreign competition.

The President evidently preferred a subsidy to high tariffs as a mechanism with which to keep the woolgrowers prosperous. S. 3453 is, however, a new approach to our mining problems and I am very anxious to have the opinions of industry and the Government on this bill.

As we have so many witnesses who wish to be heard, I request that those who have long statements give an oral synopsis and file the complete statement for the record.

As far as possible, I wish to call the witnesses in the order shown on the agenda, but there may be some exceptions where Members of Congress wish to appear, or industry witnesses are unable to stay. We will hear the Government witnesses last so they may hear what industry has to say.

Mr. Redwine, will you call the first witness?

Senator GOLDWATER. Mr. Chairman, could I please place these in the record?

Mr. REDWINE. Mr. Chairman, I want to suggest that any Senators who have a statement that they want to be put in should present it at this time.

The CHAIRMAN. Very well.

Senator GOLDWATER. I have a statement prepared. I will not take the time to read it. I ask that it be included, together with a letter from Mr. R. I. C. Manning, who is director of the State of Arizona Department of Mineral Resources and a statement from Mr. Manning concerning the maganese situation.

The CHAIRMAN. Very well. It will be printed in the record at this point.

(The statement and letter referred to are as follows:)

STATEMENT OF HON. BARRY GOLDWATER, UNITED STATES SENATOR FROM THE STATE OF ARIZONA

Mr. Chairman, I shall not discuss the bill, S. 3499, a bill to continue the purchase of crysotile asbestos in the United States, in detail, as there are witnesses at this hearing who will go into the matter in considerable detail.

The facts are that iron-free- long-fiber, soft, spinning-grade asbestos is obtained in only one place in the United States, my State of Arizona. The mines have been opened up at great expense and are proving to be better and more productive than ever was expected. The grade and type of asbestos they produce has otherwise to be imported. In spite of the fact that the Office of Defense Mobilization tells us that there is no difficulty in obtaining this material abroad, it still is true that it is an essential for insulating material on military planes and for vital electronic installations and, in my opinion, domestic production is a must.

Aside from the national defense situation, this industry is of great economic importance to Arizona, giving employment to a great many people, and, I under-

stand the livelihood of nearly 1,000 Indians on the San Carlos Reservation is affected, as well as the asbestos industry being a large source of tax income both to the State of Arizona and the Federal Government.

I hope that S. 3499 will be reported favorably by the Senate Interior Committee or, at the very least, its good features will be incorporated in S. 3435, a general bill to help our strategic and critical mineral industry of which I also am a sponsor.

STATE OF ARIZONA,
DEPARTMENT OF MINERAL RESOURCES,
Phoenix, Ariz., April 16, 1956.

Hon. BARRY GOLDWATER,
Senator from Arizona,
United States Senate, Washington, D. C.

DEAR BARRY: This will acknowledge with thanks to receipt of your April 11 communication to which was attached copies of various bills that have been introduced in the 2d session of the 84th Congress that affect mining.

We are very much interested in all of these bills and I want to assure you that we, as well as the entire mining industry, are very appreciative of your efforts in our behalf.

I am attaching hereto copies of an article on manganese which we would like to submit in support of S. 3523.

If at any time you feel that we can be of any assistance to you in the preparation of data for your use, please feel free to call on us.

Cordially yours,

R. I. C. MANNING, *Director.*

MANGANESE SITUATION

Present world conditions make it imperative that the United States have not only an adequate stockpile of manganese but a healthy mining industry producing supplies in sufficient quantities to maintain necessary steel production in the event of an emergency.

Estimated United States consumption of 35 percent and over manganese for 1955 is 2,100,000 tons with a domestic production of 300,000 tons leaving a balance of 1,800,000 tons to come from foreign sources.

A large portion of the imported supply comes from sources that could conceivably be denied to us in the event of war. Our entire stockpile at Wenden, Ariz.; Deming, N. Mex., and Phillipsburg Mont., plus the 19 million units of the carload program represent only a 6 months' supply under the present consumption rate, It is reasonable to assume that a national emergency would mean increased demand for manganese for steelmaking, thereby shortening the 6 months' supply.

It would be fatal to assume that during this short period manganese producers could get into production in sufficient quantity to provide anything approaching our necessary requirement. At the opening of the low-grade purchase depots, even though considerable publicity was given in advance, almost a year passed before capacity production was obtained in the Wenden area.

Within the continental limits of the United States there are large deposits of potential low-grade manganese. Deposits that would not be lost to us in an emergency. Sporadic markets and competition with cheap foreign supplies produced by slave labor in some instances do not create an incentive whereby American capital is willing to develop these deposits and perfect beneficiation methods for their concentration to a usable grade. Given an assured market with a reasonable price guaranty, American capital will create a going industry capable of maintaining supplies of this critical material with American labor, paying taxes to an American Government and living under decent conditions.

No one likes subsidies or guaranteed markets, for they eventually lead to governmental control and dictation, but at times they are necessary as a temporary expedient when competing with foreign sources of materials produced with labor under conditions bordering on slavery and in countries subsidized by the American taxpayer.

During the short time that the manganese program was operated, a great many small mining companies were formed. From this group a few have survived and are now gradually approaching a condition whereby they can exist under present market conditions but their production capacity can supply but a small part of the national need.

It seems imperative that in these times of world unrest in which we are spending huge sums of money to build and maintain a modern defense backed up by modern industry we should assure ourselves of an adequate supply of essential raw materials located within the boundary of our own country.

The resumption of the manganese purchase program plus a stepped up research activity for beneficiation of low-grade ores would result in the employment of thousands of American miners throughout the United States and the creation of a going industry much needed for the defense of our country.

In Arizona alone where the Wenden depot acquired 6 million units of manganese ore at a cost of approximately $10,250,000, jobs were created for about 800 miners which represented the support of 2,400 people. Taking into consideration the statement made in the Western Mineral Survey of April 1952 "for every man employed in basic industry there are five people supported in services and professions," there were undoubtedly a great many new jobs created outside of the industry. These companies and their employees undoubtedly paid thousands of dollars in taxes, thereby reducing greatly the ultimate cost of the acquisition of the ore, perhaps below that of foreign sources.

Senator MALONE. Mr. Chairman, I will not make any statement at this time.

H. R. 6373 of last year, was a simple extension of the time, which would have kept them all operating through 1958.

Thank you, Mr. Chairman.

The CHAIRMAN. Are there any other statements?

Senator BIBLE. Mr. Chairman, I, likewise wish to have an opportunity to file with the committee certain communications which I have received.

In addition to that I would like to place in the record a letter which I directed to Mr. Wormser, Assistant Secretary of the Interior, in charge of mineral resources, under date of August 31, 1955, in which I asked him concerning the long-range mineral program, in which we are all so much interested, and asking him to furnish me with the information as to the progress that was being made in developing that program.

Mr. Wormser answered me under date of September 14, 1955, and I would like to have this response of his, as well as my letter, placed in the record.

I am most hopeful, Mr. Chairman, that Assistant Secretary Wormser, as indicated in this letter of September 14, 1955, is going to be in a position either today or tomorrow, or next week, to come before this committee with a realistic and encouraging report as to exactly what they have done in language which we can understand that will hold out a real hope to the mining industry.

The CHAIRMAN. The material requested will be printed in the record at this point.

(The material referred to is as follows:)

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., September 14, 1955.

Hon. ALAN BIBLE,
United States Senate,
Washington 25, D. C.

MY DEAR SENATOR BIBLE: Your letter of August 31 inquires into the nature of the "long-range minerals program" mentioned in the President's memorandum of disapproval, dated August 14, 1955, regarding H. R. 6373, an act "To amend the Domestic Minerals Program Extension Act of 1953." Your letter inquires also as to the progress that has been made with respect to the long-range program by the Office of Minerals Mobilization in this Department.

The Office of Minerals Mobilization received its first congressional appropriation for fiscal year 1956. Pending receipt of such appropriations, the Office oper-

ated only on a scale necessary to reply to several urgent requests from the Office of Defense Mobilization, meanwhile analyzing its staffing and operational requirements and exploring the matter of Industry Advisory Committees and the utilization of consultants from industry.

The Department of the Interior carefully watched the legislative efforts that culminated in the passage of H. R. 6373, and on the President's disapproval began a review of each of the eight mineral commodities covered by the act. You will recall that the report of the President's Cabinet Committee on Minerals Policy, approved by the President December 1, 1954, recommended "studies on a case-by-case basis, to determine the proper levels of domestic mineral production for each mineral commodity on which to base mobilization plans." The Committee recognized that the problems of one mineral commodity, for example, manganese, may be quite different from those of another, such as mica.

Inasmuch as the country cannot be certain when war may come, even though it may hope and strive to avoid war altogether, it becomes necessary to lay out a program for mineral supply that will be applicable not only for a war that may begin a year from now, but also for one that may hold off until some indefinite time. This is our understanding of what is meant by the phrase "long-range program for the United States to assure an adequate mobilization base" in the President's memorandum. The "mobilization base" is the level of productivity, of all kinds, that the Office of Defense Mobilization deems desirable for the country to have on entering a war. Raw-material supply is one component, and the level of domestic production is known as the domestic component of the mobilization base of supply. It is with this domestic component of supply that the Office of Minerals Mobilization concerns itself and regarding which it submits recommendations to the Office of Defense Mobilization.

There is also the concept of a long-range program designed to promote a minerals industry that will contribute as much as possible to the long-range economic development of the country and its growing mineral requirements. But here, too, the elements of the program must be developed commodity by commodity—the varied geographic distribution of mineral deposits, their differing nature and other geologic factors that control exploration and development, the peculiarities of mineral markets, and the political complexities surrounding world production and the flow of trade combine to make impossible the development of a single program except in the general way covered by the report of the President's Cabinet Committee itself. This report, in section II, states that: "the Government has an obligation to assure that the mineral resources of the Nation be developed, conserved, and utilized in the best possible manner over the longest possible period in order to enhance its security and commerce. Development of mineral resources is, of course, primarily a function of private enterprise. The Government must, however, continue to assist in many ways," and it makes a number of broad recommendations within which the case-by-case studies should fit.

I trust that this answers the spirit of your inquiry. If not, please do not hesitate to ask further.

Sincerely yours,

FELIX WORMSER,
Assistant Secretary of the Interior

Mr. FELIX WORMSER,
Assistant Secretary,
Mineral Resources,
Department of the Interior,
Washington, D. C.

DEAR MR. WORMSER: This is in reference to President Eisenhower's recent memorandum of disapproval, dated August 14, 1955, regarding H. R. 6373, an act to Amend the Domestic Minerals Program Extension Act of 1953.

In this memorandum the President states: "I am conscious of the desirability of developing a long-range minerals program for the United States to assure adequate mobilization base and to preserve a sound minerals economy. The Advisory Committee on Minerals Policy has so advised and the Office of Minerals Mobilization has been established in the Department of the Interior to determine and recommend such a program. The funds to make the necessary studies have just become available, and work toward the development of a long-range program has begun."

Nevada is vitally interested in the production of tungsten and manganese and I have received numerous inquiries regarding the long-range program mentioned in the President's memorandum.

Would you be kind enough to advise me as to what the President has in mind with respect to the long-range program. Has the newly-established Office of Minerals Mobilization gotten underway yet?

I shall appreciate whatever information you can give me regarding the essentials of this long-range program, and also what progress has been made thus far.

Cordially,

ALAN BIBLE.

Mr. REDWINE. Mr. Chairman, I have a statement here that Senator Scott would like to have in the record at this point, and a letter addressed to the chairman, from Senator Chavez.

The CHAIRMAN. This material will be printed in the record at this point.

(The material referred to is as follows:)

STATEMENT OF HON. W. KERR SCOTT, UNITED STATES SENATOR FROM THE STATE OF NORTH CAROLINA

Mr. Chairman, I call the committee's attention to the fact that I am one of the cosponsors of most of the mineral bills under discussion here today, and although I am no longer a member of this committee and subcommittee, I am vitally interested in seeing enactment of legislation which will keep alive and thriving our domestic mining industry.

My State of North Carolina is the leading producer of two of the minerals under discussion—tungsten and mica, and both of these industries face ruin unless the Government steps in.

Based upon what I know at the present time, without having heard the testimony of the fine group of industry witnesses you have here today, I, if I were still a member of this subcommittee, would vote to report out S. 3453, the so-called package bill which provides for adoption of the philosophy of the already successfully operating Wool Purchase Act.

UNITED STATES SENATE,
COMMITTEE ON PUBLIC WORKS,
April 19, 1956.

Hon. JAMES E. MURRAY,
Chairman, Subcommittee on Minerals, Materials, and Fuels,
Committee on Interior and Insular Affairs,
United States Senate, Washington, D. C.

DEAR MR. CHAIRMAN: The committee begins hearings today on bills which are of utmost importance to the Western States and Rocky Mountain region. I am very glad to know that I am listed as one of the sponsors of Senate bill 3453 and Senate bill 3455.

With reference to Senate bill 3455, I will call attention to the fact that I have previously submitted to Senator Murray a statement by the New Mexico Economic Development Commission. New Mexico has just now emerged from a mica exploratory and development stage and the State has expended considerable funds in preparation of an inventory of this natural resource. If the present mica purchase program were allowed to lapse in 1957, it would be a serious blow to the State of New Mexico, since it would catch New Mexico just as the State is getting underway in mica production. This bill would provide for no additional funds, but would carry over the remaining funds from the initial authorization and would extend the Federal purchase authority for another 4 years. We are about 18,000 tons short of the 25,000-ton stockpile goal, and we have merely expended $8 million out of the $25 million authorized. I sincerely hope the committee will see fit to report this particular piece of legislation.

With reference to Senate bill 3453, I think the feeling in New Mexico on the part of the producers of manganese is nicely summed up in a letter I have received from Mr. L. J. Reynolds of the Reynolds Electrical & Engineering Co. in which he says:

"The encouragement to the mining interests has been of far greater value to the Nation than just the ores produced; it has attracted both capital and labor to the field where vast previously unknown resources have been uncovered. Defensively this is highly important because we can better evaluate our potential to learn just how dependent we may or may not be. The amount of ores produced and sold under the stimulating programs is very low compared to the new deposits discovered because it takes so much time after discovery to prove up claims and attract the added capital to place them in production. Capital is reluctant to take a chance when the programs are of short duration.

"Often I note the view of Government officials that the Government is paying more domestically than necessary to pay on the foreign market. They seem to overlook the great added value of discovery, exploration, and costly blocking out of reserves which takes place in the effort to produce the subsidized ore. This is of greater value to the Nation than the product. It determines our degree of self-sufficiency for times of emergency. If we wait until the emergency comes we will be short of manpower and equipment to do the job, to say nothing of the extremely high cost of doing it under emergency conditions.

"During the 2 years we have been in the mining business we have invested in excess of $135,000 without the return of 1 cent. We have found vast reserves of strategic minerals that were previously unknown. Some of these discoveries are not only unrecorded on available geological maps, but occur where no mineralization was even indicated. We know many concerns who have had similar experiences. We are just now, after 2 years, getting into a favorable position to produce. These 2 years could be extremely critical in an emergency. They could mean success or failure of our defenses so that value to our Nation cannot be measured by the difference in cost between foreign and domestic ores."

The New Mexico Economic Development Commission strongly endorses Senate bill 3523. The report on this bill from the New Mexico Economic Development Commission to me says, and I quote:

"Since the activation of the economic development commission it has become quite apparent that some of the greatest possibilities we have for strengthening our economic situation are through the production of our natural mineral resources. Our State has become quite conscious of this fact, and we have plenty of people willing to develop the industry. Our chief problem in giving even more impetus to this program than we are now giving is a lack of market for our minerals.

"We think this bill is sound in every respect in that in case of a world crisis our manganese deposits would be in a workable form and, too, even though there is no national emergency, it enables us to go forward with our own local program of development, of which mineral resources have the greatest potential."

On the other hand, I have received a report from the New Mexico Mining Association, a letter signed by Mr. C. H. Murphey, the executive director, who prefers a different approach to the manganese problem. The report by the New Mexico Mining Association says:

"It is our impression that legislation providing for further purchases of low-grade ores for stockpile accumulation is not the best available solution to the problem. We would prefer to promote a project that provides for the construction of a mill to beneficiate the ores now in stockpiles as well as those being mined currently. This method would insure the use of our low-grade ore resources and eventually dispose of the substantial tonnage already stocked under Federal programs.

"It is possible that economical methods of upgrading ores of low manganese content have been worked out and we feel this knowledge should be immediately applied to the stockpile material."

I do not think that the many Members of Congress are aware of the overall impact on the domestic economy of the many minerals and the mining industry. Submitted herewith for committee's attention is a statistical report prepared for me by Mr. Lawrence Diffenderfer, of Lordsburg, N. Mex. It involves an area extending approximately 100 miles from Lordsburg in each direction. I want to call the committee's attention to the fact that at that time there were 167 miners employed at these operations and there was a potential of another 1,600 if there were a market or a realistic program with the production of these mines. If such a statistical report were presented by a European nation to the FOA, they would have by now had the money and all 2,000 miners been at work. We have granted millions of dollars to India for the development of manganese and yet the manganese program of the United States meets with Presidential vetoes and general lack of interest. I hope the committee will act firmly and soon on

a domestic mines and minerals bill which will meet the needs and problems of the mining States and the Rocky Mountain area.

Sincerely,

DENNIS CHAVEZ, *United States Senator.*

Statistics—Strategic metal mines inactive, Lordsburg area, Apr. 15, 1954

Mine	Kind of ore	Capacity crude per day	Miners employed now	Miners idle now	Tons per day producing	Tons per day no market
Royal John	Zinc-lead	50	0	35	0	50
Teal	do	35	0	15	0	35
Continental, Combination, Hobo, Princess, Bull Frog group	do	390	0	310	0	390
Empire group	do	300	0	350	0	300
Peru group	do	900	0	400	0	900
Asarco group	do	550	0	500	0	550
Houston-Thomas	do	25	0	8	0	25
Langston	Silver, etc	10	0	6	0	10
Tampico	do	10	0	6	0	10
Contact group	Zinc-lead	10	0	6	0	10
Peerless	do	10	0	6	0	10
Manhattan	do	10	0	6	0	10
Bear Mountain	Manganese	10	0	6	0	10
Lone Mountain	do	10	0	6	0	10
Fuller	do	10	0	0	10	0
Hilltop group	Zinc-lead	25	30	0	25	0
Banner	Copper	275	125	0	275	0
Atwood group	do	50	0	25	0	50
Walrich group	Zinc-lead	35	0	15	0	35
Ruth	do	35	0	15	0	35
Brown	do	10	0	6	0	10
Baldwin	do	35	0	15	0	35
Francis	Copper	35	0	15	0	35
Trejo	Lead	10	0	6	0	10
Ragsdale	do	10	0	6	0	10
Annita	do	35	0	15	0	35
Hornet	Zinc-lead	50	0	25	0	50
Steins group	do	35	0	16	0	35
Animas	Manganese	10	0	6	0	10
Ash Peak	do	10	6	0	10	0
Last Chance	Silver	35	0	6	0	35
Uranium, Lordsburg development						
Total		3,025	167	1,831	320	2,705

NOTE.—42 small mines no market. 14 large mines no market.

Mr. REDWINE. May I suggest that any time a Congressman or Senator comes in during the day, that we interrupt the proceedings so that he can make his statement.

The CHAIRMAN. Very well, that will be done.

Mr. REDWINE. Now, Mr. Chairman, we have in the last 30 minutes received from the Office of Defense Mobilization a report on the first bill which we are taking up this morning, the mercury bill.

We asked for a report from them within 15 days on the 23d of last month. We received this report only this morning, within the last 30 minutes.

It is an adverse report. I suggest that it should go in the record at this point. I only have one copy of it. We will have other copies of it available during the course of the morning.

The CHAIRMAN. Very well, the document will be printed in the record at this point.

(The letter referred to is as follows:)

April 19, 1956.

Hon. JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
United States Senate, Washington, D. C.

DEAR SENATOR MURRAY: This is in further reference to your letter of March 23d, requesting our comments concerning S. 3497, a bill to encourage the discovery, development, and production of mercury in the United States, its Territories, and for other purposes.

This bill contemplates the extension of the current mercury purchase program to June 30, 1961, or until a total of not less than 125,000 flasks of domestic mercury have been acquired at a price of not less than $275 a flask.

Since the price of mercury has exceeded the Government guaranty, very few flasks have been delivered to the Government under the present expansion program. The Government's price guaranty through December 31, 1957, however, has, nevertheless, been an important encouragement to domestic production.

A recent review of the mercury situation reveals it to be relatively satisfactory from a defense standpoint. We plan, however, toward the end of this year to make a complete and detailed survey of our defense position on this material. If this survey indicates the need for continuation or modification of the current program, existing authority (provided by the Defense Production Act of 1950, as amended) is adequate for such purposes. The current program is, of course, being carried out under the authority of that act.

In view of the above, the enactment of S. 3497 would not appear to be necessary from the standpoint of defense.

The Bureau of the Budget advises that it has no objections to the submission of this report.

Sincerely yours,

ARTHUR S. FLEMMING, *Director.*

The CHAIRMAN. Does Senator Barrett wish to make any statement?

Senator BARRETT. Mr. Chairman, I am very much interested in this legislation. I think it is extremely important that we take some steps immediately to extend the existing law at least, and make certain that some of these smaller producers, particularly of tungsten, will not be shut off completely and obliged to close down their operations.

I think it demands immediate action if we are going to take care of them.

Are there adverse reports on all these bills?

Mr. REDWINE. We have received an adverse report this morning, Senator Barrett, on mercury, beryl, columbium-tantalum, and asbestos, from the Office of Defense Mobilization, that is for the individual bills.

We have received no reports of any kind from Interior, and from ODM only on the four I mentioned.

(The material referred to is as follows:)

APRIL 19, 1956.

Hon. JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
United States Senate, Washington, D. C.

DEAR SENATOR MURRAY: This has reference to your letter of March 23, requesting our comments concerning S. 3486, a bill to encourage the discovery, development, and production of beryl in the United States, its Territories, and possessions, and for other purposes.

The minimum stockpile objective for beryl has been achieved. The Defense Production Act domestic purchase program for beryl, which will not expire until June 30, 1957, or when 1,500 short tons have been delivered to the Government, whichever is earlier, and commitments made by the Commodity Credit Corporation, will result in the further accumulation of large amounts of beryl. In addition, there are research programs in process which may result in the development of new techniques for beneficiating plentiful low grade domestic ores.

In view of the foregoing, our relatively satisfactory defense position in beryl, and the fact that the domestic purchase program will not expire for some time, it would appear that there are no adequate data available on which to base a conclusion that the present domestic purchase program should be extended until June 30, 1961. It is our opinion that the existing authority provides a flexible tool for undertaking whatever additional type of program may be found necessary to meet our defense requirements for beryl—including an extension of the present program. In view of the foregoing, we do not recommend enactment of S. 3486.

The Bureau of the Budget states that it has no objection to the submission of this report.

Sincerely yours,

ARTHUR S. FLEMMING, *Director.*

APRIL 19, 1956.

Hon. JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
United States Senate, Washington, D. C.

DEAR SENATOR MURRAY: This has further reference to your letter of March 23, requesting our comments on S. 3485, a bill to encourage the discovery, development, and production of columbium-tantalum bearing ores and concentrates in the United States, its Territories and possessions, and for other purposes.

The proposed bill would extend to June 30, 1961, the termination date of all purchase programs designed to stimulate the domestic production of columbium-tantalum bearing ores and concentrates.

Columbium-tantalum purchase programs were established by the Government under the Defense Production Act early in the Korean war to encourage expansion in supply from both domestic and foreign sources for industry and stockpile needs. At that time, both metals were in critically short supply for defense requirements, columbium being essential in superalloys used in jet engines, and tantalum having critical importance in incapacitors and electronic tubes.

Under these circumstances, the Government guaranteed to purchase 15 million pounds of contained combined columbium-tantalum pentoxides equivalent to about 11 million pounds of contained metal. The price schedule established base prices for material of minimum content and provided for payment of higher prices for higher grade material. In addition, a bonus of 100 percent was paid by the Government to the producer of metal. Termination date of the program was December 31, 1956, for foreign purchases, and December 31, 1958, for domestic purchases. The full 15-million-pound quota was obtained by the end of 1955, at an average cost of $4.30 per pound, including bonus.

The proposed legislation would extend the termination date of programs to stimulate domestic production to June 30, 1961, and provide that changes in specifications and price schedules be no less favorable to producers than those in effect on January 1, 1956. The bill would not, however, establish an additional quota for domestic purchases.

The Office of Defense Mobilization, in cooperation with its delegate agencies, is responsible for determining the adequacy of materials to meet defense and stockpile needs. The Congress has provided adequate authority and funds for all actions necessary at this time to assure the availability of materials for an emergency. At present, Government inventories of both columbite and tantalite exceed the minimum and long-term stockpile objectives for these materials and future deliveries of both materials under firm commitments will develop large overruns of the objectives. Furthermore, present Government inventories of each material substantially exceed the mobilization requirements.

In view of the foregoing, a defense justification cannot be established for extension of the termination date of the domestic purchase program and accordingly we do not recommend enactment of S. 3485.

In the event that further extension of the program becomes necessary to meet defense requirements, it is our opinion that existing authority is adequate for the purpose.

The Bureau of the Budget advises that it has no objection to the submission of this report.

Sincerely yours,

ARTHUR S. FLEMMING, *Director.*

Senator BARRETT. What about the tungsten, S. 3379 and the other bills?

Mr. REDWINE. No report has been received as yet. We have an adverse report on the Malone-Barrett package bill.

Senator MALONE. Mr. President, I would like at this point to offer for the record Public Law 206, 83d Congress, which was H. R. 2824 at that time. Senate bill 2876 would simply extend for the next 5 years.

The CHAIRMAN. All right.

(Public Law 206, 83d Cong., is as follows:)

[PUBLIC LAW 206—83D CONGRESS]

[CHAPTER 339—1ST SESSION]

[H. R. 2824]

AN ACT

To encourage the discovery, development, and production of tungsten, manganese, chromite, mica, asbestos, beryl, and columbium-tantalum-bearing ores and concentrates in the United States, its Territories, and possessions, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Domestic Minerals Program Extension Act of 1953".

DECLARATION OF POLICY

SEC. 2. It is hereby recognized that the continued dependence on overseas sources of supply for strategic or critical minerals and metals during periods of threatening world conflict or of political instability within those nations controlling the sources of supply of such materials gravely endangers the present and future economy and security of the United States. It is therefore declared to be the policy of the Congress that each department and agency of the Federal Government charged with responsibilities concerning the discovery, development, production, and acquisition of strategic or critical minerals and metals shall undertake to decrease further and to eliminate where possible the dependency of the United States on overseas sources of supply of each such material.

SEC. 3. In accordance with the declaration of policy set forth in section 2 of this Act, the termination dates of all purchase programs designed to stimulate the domestic production of tungsten, manganese, chromite, mica, asbestos, beryl, and columbium-tantalum-bearing ores and concentrates and established by regulations issued pursuant to the Defense Production Act of 1950, as amended, shall be extended an additional two years: *Provided*, That this section is not intended and shall not be construed to limit or restrict the regulatory agencies from extending the termination dates of these programs beyond the two-year extension periods provided by this section or from increasing the quantity of materials that may be delivered and accepted under these programs as permitted by existing statutory authority: *Provided further*, That the extended termination date provided by this section for the columbium-tantalum purchase program shall not apply to the purchase of columbium-tantalum-bearing ores and concentrates of foreign origin.

SEC. 4. In order that those persons who produce or who plan to produce under purchase programs established pursuant to Public Law 774 (Eighty-first Congress) and Public Law 96 (Eighty-second Congress) may be in position to plan their investment and production with due regard to requirements, the responsible agencies controlling such purchase programs are directed to publish at the end of each calendar quarter the amounts of each of the ores and concentrates referred to in section 3 purchased in that quarter and the total amounts of each which have been purchased under the program.

Approved August 7, 1953.

Mr. REDWINE. Mr. Williston, please.

Will you state your name, industry, and connection, Mr. Williston?

STATEMENT OF S. H. WILLISTON, CORDERO MINING CO., PALO ALTO, CALIF.

Mr. WILLISTON. My name is S. H. Williston. I am executive vice president of the Cordero Mining Co., with operations in Nevada, Oregon, Idaho, and California.

We are essentially mercury producers, although we have one small tungsten mine in Idaho and in California what is probably the second largest reserve of proven antimony in the United States.

I only wish to testify in regard to the mercury bill.

I wish to express my appreciation for the opportunity to appear before this committee.

I also wish to express my very great appreciation for all the courtesies that have been extended to the small mining industry by the Senate Interior Committee in the past.

I will be quite brief, but I would like to give a few figures in regard to the mercury industry since 1939.

In 1939 we produced 18,000 flasks a year, essentially the same amount we produce now.

In 1943 the mercury industry in the United States produced for a time at a rate of 63,000 flasks a year and was the sole supply of the United States, Great Britain, France, and allies, and all of Russia.

After the war, in 1949, the production dropped so that only one mine was operating at a loss and industry was at its lowest level in a hundred years. That brings it fairly well up to the present.

The present production of mercury is 18,000 flasks a year, exactly the same as it was in 1939. The present price of mercury is 3½ times the 1939 cost, and costs of production are 3½ times the 1939 cost.

Senator MALONE. What is the price now?

Mr. WILLISTON. This morning it went up $1. It is $265 this morning.

Senator GOLDWATER. That is a pound?

Mr. WILLISTON. No, $265 a flask of 76 pounds. It has been a historic measure for 1,900 years.

Senator GOLDWATER. The price was $265?

Mr. WILLISTON. $265 this morning.

Senator DWORSHAK. That is the world price.

Mr. WILLISTON. That is the New York price. There is a $19 duty. The London price is somewhat lower.

Senator MALONE. What was the lowest price you mentioned that mercury reached after World War II?

Mr. WILLISTON. It was shipped f. a. s. duty unpaid, $45, New York. That would be the equivalent of 2 cents a pound lead.

The mercury industry folded just as the lead industry would have had to fold if it had had to sell lead for 2 cents a pound.

Senator BARRETT. Was the industry in a bad way in 1939?

Mr. WILLISTON. No; it was average. It was about the same as it had been for the preceding 80 years.

Senator BARRETT. You are in relatively the same position today as you were then?

Mr. WILLISTON. We are, with this exception: In 1939 we had 40-percent tariff; $19 per flask.

At the present time we still have a $19 tariff, but it is now ad valorem, 8 percent. The industry was closed down almost entirely; one mine operated at a loss in 1949.

It was caused because in 1947 the Italian and Spanish producers stated in the London newspapers that they were going to shut down the domestic industry. It took them 2 years to do it.

When the war opened, the price immediately rocketed to $200.

Senator MALONE. Can they shut it down now if they so desire?

Mr. WILLISTON. At any minute if they so desire.

Senator MALONE. They can always do that if there is not enough tariff to make up the difference between the cost of operation?

Mr. WILLISTON. Or no other assurance of a floor price.

Senator BARRETT. What is the consumption in this country at the present time?

Mr. WILLISTON. Approximately 50,000 flasks a year.

Senator GOLDWATER. Has the industrial use of mercury increased since 1939?

Mr. WILLISTON. Approximately doubled.

Senator GOLDWATER. You were producing 18,000 flasks in 1939?

Mr. WILLISTON. Yes.

Senator GOLDWATER. And 18,000 today?

Mr. WILLISTON. Yes.

Senator GOLDWATER. The use now is——

Mr. WILLISTON. Is 50,000 flasks plus an AEC requirement which we don't know.

Senator GOLDWATER. So that actually the foreign producers are getting more of our domestic market than our domestic producers?

Mr. WILLISTON. Yes.

Senator BARRETT. What was our consumption in 1939?

Mr. WILLISTON. 25,000, about.

Senator BARRETT. In 1939 we were producing about two-thirds of our consumption; today we are producing about one-third?

Mr. WILLISTON. That is right.

Senator MALONE. What percentage could you produce if you had a guaranteed price over a long term of years, or a tariff that made up roughly the difference between the wage standard of living here and the taxes and costs of production?

Mr. WILLISTON. I think the best answer I can give to that was that in 1943, under a price which really had some incentive, we produced all our requirements for the United States, Great Britain, France, and Russia.

We produced 52,000 flasks a year. The price at that time was $190, but costs were not much above the costs of 1939.

Senator MALONE. What is the Government paying for mercury under the purchase program?

Mr. WILLISTON. They have not been paying anything. There is a program just as there is for tungsten and all these other minerals. The price floor of the program was $225. That price was set when the current market price was $325. It was set $100 below the market.

Last year we sold at a loss to the Government 5 flasks at $50 a flask loss. The price was $275 and we sold it to the Government at $225 to make certain that we would be eligible if the price ever fell. That is all the mercury that the Government has purchased under the program.

The program was asked for by some divisions of the Government because of a particular need.

The industry was not consulted. The industry did not know about the program. There was no political pressure. There was no legislation and there was no war.

Senator DWORSHAK. What year was that set up?

Mr. WILLISTON. Twenty months ago. Actually, it was July 1 of 1954, a year and a half ago. There is 20 months left in the program.

Now, diverting just a bit, we are a little bit proud, or are we, in 1950 the copper industry was given a floor guaranty of almost a billion dollars by DMPA as an assurance against loss in the construction of new copper products.

Last year the lead-zinc industry received $50 million worth of price support on lead and zinc.

Other strategic metals over the last 6 years have received in Government assistance something like $400 million. In the last 20 years we have sold to the Government one carload of mercury in 1941, at the market price.

Last year five bottles at a loss. The stockpile, the defense stockpile, is 99.9 percent foreign mercury and no domestic producer has been given the opportunity to bid on stockpile requirements in the last 11 years.

Senator MALONE. What you were saying a while ago, Mr. Williston, is that the only thing that can keep you in business is in some way a guaranteed price or tariff that makes up the difference between the wages, standard of living, and the taxes and costs of doing business in the chief competing nations for the product.

Mr. WILLISTON. If we had the percentage tariff protection now that we had in 1939, we would be as well or better off than we were in 1939. It was 40 percent ad valorem at that time. It is 8 percent now.

Senator MALONE. And a flexible tariff, as adopted in 1930, that could be moved up or down as the standard of living of the nations changed, would be a satisfactory method?

Mr. WILLISTON. Any tariff that would give us reasonable protection against 60 cents a day labor in Spain and $2 a day labor in Italy, would be quite all right. We can offset part of it.

Senator MALONE. What you are saying is that Italy and Spain at any time they choose, could close your industry down here simply on the difference in the wage, standard of living of their country and ours, and the taxes and cost of living between there and here?

Mr. WILLISTON. Yes; without any doubt whatsoever.

Senator MALONE. So what we are doing then, in our policy of purchasing mercury and many other materials, is encouraging the low-cost-labor competition in this country.

Mr. WILLISTON. Yes.

Senator MALONE. We have ceased adjusting the duty or tariff that we used for nearly a century and a half to take the profit out of that low-cost labor at the water's edge.

Mr. WILLISTON. That is quite true, Senator.

Senator GOLDWATER. Could I interject a question here?

Mr. WILLISTON. Certainly.

Senator GOLDWATER. I was wondering to what extent is mercury used in the defense effort. Let me put it another way so that we can get an answer that will read better.

Has the use of mercury increased in defense use since 1939?

Mr. WILLISTON. Yes.

Senator GOLDWATER. Do you feel from the knowledge that you have of the stockpile, that it is adequate, the stockpile compared to the use of the military?

Mr. WILLISTON. It depends on the use of the military. Industry information on the stockpile would indicate a large stockpile. The industry estimate is about 400,000 flasks, give or take 50,000.

Senator GOLDWATER. I ask that question because in Dr. Flemming's report, he says, and I quote:

> Recent review of the mercury situation reveals it to be relatively satisfactory from a defense standpoint.

He goes on to say:

> We plan, however, toward the end of this year to make a complete and detailed survey of our defense position on this material.

I might say this is typical of Dr. Flemming's attitude toward the mining industry, and the mineral situation in this country.

I was wondering if you had had any better success than we have had in finding out what is the situation of any stockpile in our defense effort.

Mr. WILLISTON. It is relatively easy to find out what any amount of metal in the stockpile is. Just ask the industry concerned. They know from their own records what it is within a relatively small amount.

Senator GOLDWATER. Of course, we cannot do that because it is a secret in the ODM and the Senator is not allowed to know secrets. I have tried to point out to Dr. Flemming anybody that can add 2 and 2 and get 4 consistently can find out what the stockpile situation is.

I have been arguing with him for 2 years on releasing this information. I do not think a report like this can be taken with much value when they merely say "relatively."

Senator BIBLE. Would you pardon an interruption at this point. Senator Ervin from North Caroline is here. Two of us happen to be members of the Calendar Committee on the floor of the Senate. We have a call of the calendar starting at the 11 o'clock meeting this morning.

Can we defer to Senator Ervin?

Senator MALONE. Let his statement appear at the proper place in the record.

STATEMENT OF HON. SAM J. ERVIN, JR., UNITED STATES SENATOR FROM THE STATE OF NORTH CAROLINA

Senator ERVIN. As Senator Bible has stated, he and I are supposed to work on the Calendar Committee. If you will permit me to make a short statement at this time, I will go and look after his work over there and mine, too.

Senator BIBLE. I might say that I hope I have better luck here than I know you will have over there.

Senator ERVIN. I come before you primarily interested in Senate bill 3455, of which I am cosponsor, which is designed to extend the purchasing program of the Government in stockpiling mica.

I am not going to undertake to make any extensive statement about it. Mr. Sam Phillips, of my State, who is very familiar with my industry, I understand, will make a statement later today.

I want to say I construe this bill as of great importance to the defense effort. It is designed to make us self-sufficient if necessary in the production of mica and to stockpile this strategic mineral which has scores and scores and scores of uses. Among those, it is being used in the manufacture of jet airplanes.

So I wish to ask the committee to give a favorable report on this bill.

I thank you for permitting me to interrupt you at this time.

The CHAIRMAN. Thank you, Senator.

You may proceed, Mr. Williston.

Mr. WILLISTON. Senator Goldwater, you asked a question about the stockpile in military requirements. I think I can clarify this to an extent, and it might be helpful to you.

As I said, this mercury program was put in without effort from the industry and without knowledge of the industry and we were somewhat surprised when it was put in.

It is common information in the industry that that program was put in at the request of the Atomic Energy Commission for top secret use.

That use is so top secret that they won't even tell the Department of the Interior what it is, they won't even tell the Office of Defense Mobilization how much they want, or what they are using it for, or what they are going to need, or what it is for, or when or where; consequently, ODM has little knowledge of the requirements of AEC.

The Department of the Interior has no knowledge of the requirements of AEC, and the industry has not been consulted in an industry advisory meeting since January of 1950, and by the stockpile groups since 1947.

There is an industry advisory committee in OMM, but it has never called a meeting.

Now, several uses for mercury in the atomic energy setup have been in the papers. There is no secret about those. One of them is the high energy breeder power units.

The second one is in shielding for certain special installations.

The third one is as a heat-exchange medium between the metallic sodium used in the atomic pile and the steam generation beyond.

That was a relatively recent release from AEC. Those are important uses of AEC, but they are not the top secret use.

I could make an educated guess as to that top secret use. I would rather not do it. If I was right, I would be breaking security, and if I was wrong, I would be giving misinformation, but I am quite confident that I know what it is.

Senator MALONE. Then is not your problem a long-standing policy, not beginning or ending with this administration, beginning a considerable time ago, but continuing now, that their policy is to buy not only mercury, but all of the other critical materials where they can get them the cheapest and import them?

That has been the policy that has been followed now for 24 years; is that not about right?

Mr. WILLISTON. Yes. As I have said, we have not even been allowed to bid on Government requirements in 16 years.

Senator MALONE. The policy is to assist the other nations through the purchase of whatever they have to sell; therefore, they sell it at a lower price. The record, of course, shows that in your own industry when it is shut down the price will go up to what the traffic will bear.

The public is not educated to that point, apparently, but your problem is the long-range administration policy, not any certain administration, but all of them; where you can buy the cheapest any place in the world, regardless of the wage, standard of living, taxes, or costs of doing business; is that not true?

Mr. WILLISTON. Yes.

Senator DWORSHAK. Mr. Williston, is it not necessary and logical to draw some distinction between the elements of national defense and requirements of a stockpile essentially for national defense, and also the advisability of promoting an expanding production of domestic minerals? Is there not a distinction between those two?

I think if we recognize that we may be able to make better progress in determining what the responsibilities are of ODM and Dr. Flemming, and also the Interior Department.

I think I have followed these mining developments for the past 5 or 6 years as closely as any other Member of Congress. At times I have been in violent disagreement with policies of the administration.

On other occasions, I have been in accord with the thinking of those agencies charged with the supervision and the administration of these various policies.

In your judgment, do you think we should draw any line between the requirements for national defense to which the Government and the Congress should give primary consideration and the other equally important aspects involving the need of expanding and promoting a healthy domestic mining industry?

Mr. WILLISTON. I think the last statement, a healthy domestic mining industry, is unquestionably the best defense that the country could have.

Senator DWORSHAK. I am not disagreeing with you, but I am asking you whether we must not in all fairness break this entire problem, or program, down into two segments and consider one as essentially being vital to national defense and the other as you say, being likewise important.

But if we have the responsibility of ODM primarily for national defense, then do you not think it is logical that we must break it down?

Mr. WILLISTON. I agree with you, Senator. The point is now we have ODM taking care of defense and nobody taking care of anything else.

Senator DWORSHAK. Whose responsibility is it to take care of anything else?

Mr. WILLISTON. Defense says it is not theirs. They say it is Interior's.

Senator DWORSHAK. That is the point I am trying to make, that in all fairness to Dr. Flemming, who in his various appearances before this committee, as well as subcommittees of the Appropriations Committee, has pointed out that his responsibility under the law applies primarily to the national defense features.

Mr. WILLISTON. That is right.

Senator GOLDWATER. Might I ask a question there?

Mr. WILLISTON. Yes.

Senator GOLDWATER. This suggests the question, if ODM does not know atomic energy requirements, how can they write an adverse report?

Mr. WILLISTON. They said they thought it was reasonably good, the way he read it. That is the reason they could not say whether it was good or bad.

I don't think they know.

Senator GOLDWATER. They said the bill was bad. Well, it is typical of the way they operate. We are used to it.

Senator MALONE. Mr. Chairman, to clear up one point as we go along, I agree with you, absolutely, that the best stockpile is a going concern industry. The stockpile then will contain enough of any critical material that plus a going concern production equals what you need during the period that you are likely to have an emergency, a war, or anything, where you cannot get it any place else.

Now, the going concern industry, then, is what you are talking about, a healthy going concern industry in mercury.

Mr. WILLISTON. That is right.

Senator MALONE. That is all we are talking about with all the other minerals. But no one for 24 years has considered it necessary to have a going concern industry because they want to buy it where they can buy it the cheapest, and do not want to equalize the labor cost, taxes, and other cost of doing business, tariff or duty, as the Constitution calls for; is that right?

Mr. WILLISTON. Senator, yes.

If I may, I would like to come up to the particular aspects of the present purchase——

Senator BARRETT. Before you do so, I would like to ask one question, if you do not mind.

Mr. WILLISTON. Yes, sir.

Senator BARRETT. I am very much interested in the discussion of the alternative to this program because of the fact it appears that there is opposition to legislation of this character. I believe we ought to be giving some concern to the matter.

I think, myself, that the Congress is in a mood right now to give very careful consideration to some alternative legislation. While I might agree with Senator Malone on the tariff, that appears to me to be rather a hopeless objective at the present time.

But it does seem to me that we could lay a pretty strong foundation here for an import quota that would protect the industry on a historical basis.

Now, the reason I am taking this time is that I would like to find out from you if the historical record of the industry is that they have been able to, and they have been able to maintain a prosperous industry on about two-thirds of the consumption of this country; is that about right?

Mr. WILLISTON. We could maintain a prosperous industry on 40 to 50 percent of the market, if we had it.

Senator BARRETT. What is the record in that respect? What is the average over a long period of years?

I think you told me that in 1939 you were producing about two-thirds?

Mr. WILLISTON. About two-thirds. In 1943 we were producing all—100 percent.

In 1949 we were producing almost nothing. It was all imported.

Senator BARRETT. In 1943 we were in a war, and they had to rely on the production of this country?

Mr. WILLISTON. Since 1944 they have been relying on Italy and Spain. From 1941 to 1944 we supplied all of the allies, including shipments to Russia.

Senator BARRETT. In any event, if you had 50 percent of our market, you could maintain a healthy, prosperous industry?

Mr. WILLISTON. We would be so happy, we would not know what to do.

Senator BARRETT. And the price, of course, if you had half the market, we would not be concerned too much with the cheap labor cost abroad, because they would have to buy it from you?

Mr. WILLISTON. That is right.

Returning to the program which the Government put in force almost 2 years ago, this was 125,000 flasks of domestic mercury to be purchased at $225 a flask. An appropriation of $28 million was set aside by the ODM for the purpose of buying that mercury.

At the time the program was put into effect, the ODM and GSA made statements which indicated that they really wanted that quantity and they were not doing it merely for the support of the domestic industry.

Out of the $28 million they have expended $1,125 so far. The program will expire in 20 months.

During the last year we have been looking for additional mercury properties and we spent some $300,000 of our own money trying to find them. That was not a DMEA loan; that was ours, and was considerably more than half of our profits from operating. The time has now come when there is no longer sufficient time to explore for more properties and put them into operation under the present program. We have stopped any additional exploration. We are pulling in our horns.

We have enough proven ore to last 2 years. We expect to produce it and we expect to shut down at the end of that time unless something happens.

At the present time, we are producing 35 percent of the domestic mercury. I believe that the other 65 percent of the mercury industry, at the price of $225, will lose money and go out of existence.

So if you care to look forward to the expiration of the program, plus about 6 months, unless there is a continuation of this program, the industry will be dead and I doubt very much if you will ever get another domestic quicksilver producer to stick a shovel in the ground.

We have been burned badly. We went down the drain completely in 1949 and nobody would give us even a kind word. When we go down the drain the next time, we will stay there.

If we do any more exploration for mercury, the only chance that we have is to do it abroad, because that is the only place that we can possibly exist in competition with European mercury.

Senator MALONE. I would like to ask Mr. Williston this question, Mr. Chairman; he is a real expert in his field because he has confined his efforts to it for many years and been successful.

The only thing that makes him not a success is congressional action. The people of this country, generally speaking, investors who can raise the money to do it, under the general congressional and administration policy for 24 years, is not it their policy now to go abroad and locate mines and ship the stuff here, and use the low-cost labor?

Mr. WILLISTON. Under the present setup they would be fools if they didn't, and they can't exist if they don't go abroad.

Senator MALONE. The public is not generally aware of that. Then when industry is gone here, if you do go out of production entirely, then where do you predict the price of quicksilver will go?

Mr. WILLISTON. The pound of flesh, every nickel the foreigners could get, they would hook the United States. I would not be surprised at six or seven hundred dollars a bottle.

Senator MALONE. In other words, it would double the price at which you could stay in business here when they had us at their mercy?

Mr. WILLISTON. Yes.

Senator MALONE. That is the record?

Mr. WILLISTON. Yes, the reason for the action of the foreigners in 1949 when they killed the United States industry is we had built up a productive capacity of 60,000 flasks a year, which was more than we needed.

Senator DWORSHAK. Who is "they"?

Mr. WILLISTON. The European quicksilver cartel, which at that time was made up of the Spanish Government and the Italian Government. They owned and operated the mines in Italy and Spain.

Senator DWORSHAK. Did our own Government have any participation in the programs at that time, or in shaping policy involving the procurement of mercury?

Mr. WILLISTON. They bought all their stuff abroad. They would not buy it from us.

Senator DWORSHAK. Who is "they"?

Mr. WILLISTON. The United States Government.

Senator DWORSHAK. Which agency?

Mr. WILLISTON. GSA, Emergency Procurement Service. We have not had an opportunity to sell quicksilver to the United States Government since 1943. The last we sold was in 1941 at the market, one carload.

Senator MALONE. What has happened is that through our Marshall plan, ECA, FOA, ICO, or whatever it is now—we will change the name next year—we have furnished money to these governments to build these plants, have we not?

Mr. WILLISTON. Yes.

Senator MALONE. Taxpayers' money, to shut the taxpayers down in this country.

Mr. WILLISTON. The present Spanish plants to produce quicksilver are copies of our plant in Nevada.

The United States State Department, I forget the year, 1946 or 1947, paid the Spaniards expenses while they came over and looked it over and they bought an improved enlargement of our plant and put it in operation.

Senator MALONE. My only point in the question is that it is the objective of our own Government to do to our producers exactly what is happening to them. The only thing that keeps it going is once in a while we pass a bill giving them a price.

I will ask you this question: Can you spend money on development that you cannot get back beyond the limit of time that the price is guaranteed?

Mr. WILLISTON. We count only on the guaranty. We have no faith that the administrative branch of the Government would give us any consideration at all after any given exploration time.

Senator MALONE. Then the principle laid down by Congress as we followed for 150 years, setting the duty to make up the difference, was a long-range policy set by Congress so there was a logical percentage of the profit each year in a going concern mining operation expended for exploration to find new deposits and for extending operation, is that not right?

Mr. WILLISTON. That is true. You can see it in the production record. We were self-sufficient in copper in 1939. Now we import 50 percent.

We were self-sufficient in lead in 1939; we import more new lead than we mine.

We were self-sufficient in zinc, now we import 60 percent.

I could go down the list on a dozen metals.

Senator MALONE. As a closing question, then, as far as that point is concerned, when we abandon the principle in our "shotgunning," all this stuff in 2, 3, or 4 or 5 years, we then reach the point where we have to appropriate Government money for exploration to find these minerals then that are needed.

Mr. WILLISTON. That is right. The question I would like to raise there, is it worth spending money to find a mine if after you find it you can't operate.

Senator MALONE. If it is taxpayers' money, it does not matter whether it is lost or not, under our system.

Mr. WILLISTON. The point is that some of the producers' money goes in it, too.

Senator MALONE. In any case, you do not expend money for exploration beyond the guaranteed price.

Mr. WILLISTON. Not any more.

Senator MALONE. If there was a principle laid down so that the principle would have to be changed before they could break it, then you would continually spend money for exploration.

Then, asking one further question, about how far ahead does a mining company such as your own, or any going concern mining operation, where the leaders know their business, about how far do they keep the reserves ahead in exploration?

Mr. WILLISTON. It varies. In our own business we try to keep 2 to 3 years reserve ahead that we know is there. We carry on a program of perpetually exploring on top of that. That is the one we canceled now. Even our development floor beyond 2 years is stopped.

Senator MALONE. So then what you do, actually, if it begins to shorten up, if you see from the money you are spending, if you have a long-range principle so that you can spend the money and the time of 2 years, or 3 years, begins to shorten, do you spend a little more money for exploration?

Mr. WILLISTON. Yes.

Senator MALONE. So where these people in Government start telling us how much mercury or lead we have in this country, they see

what you call the reserves and they say we are out of it after that; is that not about the way it works?

Mr. WILLISTON. The Government published some reserve figures in Nevada in 1944. We have already produced twice as much from Nevada as they had in the total reserves in the State.

Senator MALONE. You and I know that tungsten in Nevada, Montana, and California can last this country a hundred years, but you cannot do it at $2 a day labor prices.

Senator BARRETT. Will you give us a résumé of what your recommendations are to take care of this situation?

Mr. WILLISTON. There is before this committee a bill to extend the time of the mercury program to 1961. It now expires January 1, 1958. So it is a 3-year extension of the present bill.

There is also a recommended increase in price to $275 a flask from the $225 floor which has been ineffective.

If I could make a recommendation to this committee, I would like to recommend that the time of 61 is fine.

Possibly we will get some permanent legislation between now and 1961 so that we could do some intelligent planning. It is stopgap.

As far as price is concerned, we ourselves could keep going with a floor of $225. The rest of the industry could not at a floor of less than $250.

Industry would rather have the least possible draw on the Government. That is, we don't want to cost the Government any money if we can help it.

If we had the floor, the foreigners would not cut below the floor because they have nothing to gain.

For that reason, I would like to recommend to the committee that they substitute $250 rather than $275 in the earnest hope and the earnest expectation for my part that industry might never have to call on any of the $28 million appropriated or, if so, only for very brief periods.

That would be a floor which would prevent our European competition from trying—they know they could not run us out of business, so why should they try; they can't do it.

Senator BIBLE. Mr. Williston, if I understand you correctly, even if you were to make a call on this bill, if passed, if in 1961 the price was $250 a flask, the total call on the United States Government would be $28 million.

Mr. WILLISTON. That is correct; and the money is already appropriated out of defense funds and none of it has been used; and as long as the program is in effect it stays in the program.

Senator BIBLE. So that money is appropriated, earmarked, is in the defense program?

Mr. WILLISTON. Yes; and there is enough there to keep it until 1964 right now, if they took all the production.

Senator BIBLE. I think that is very important.

Mr. WILLISTON. There is no appropriation needed. We would hope we would never have to call on any of it. We would like to have the time extended. If we don't, we will plan on folding up in 2 years.

If it is extended, we will go ahead and explore and try to carry on intelligently after that.

I think there is little or no cost to the Government involved. We have never had a dime out of them in twenty-odd years, and I hope we never have to have it, but with the tariff rate of 8 percent, which is largely eaten up by the difference in cost of transportation from the Western United States to New York—it cost our competition a dollar and a half a flask to deliver in New York, it cost us $7 a flask.

Senator MALONE. In other words, it cost you more money to deliver from Nevada to New York than it does from Italy or Spain?

Mr. WILLISTON. Three to four times as much.

Senator BIBLE. Mr. Williston, before you leave, I wonder if you could throw some light on this: I remember last fall I attended a very fine conference of western governors at Sacramento, called for the purpose of considering this mining problem, the problem that is facing the industry. I believe you were chairman of that.

Mr. WILLISTON. I was, Senator. I was very glad you could be there.

Senator BIBLE. I am wondering if there was any concrete recommendation that came forth from that conference that might be helpful to this committee, because you were considering there very much the same problems which we are considering here.

Mr. WILLISTON. We were considering the same thing. I did not mention it for a particular reason. I was appointed by the Governors of Nevada and California to do that. I was appointed to make recommendations to the western governors and not to anyone else.

We prepared a very extensive report. We tried to make it as conservative as possible. We referred it back to the governors. Thirteen governors have approved it individually, but the 13 governors have not approved it collectively.

It is possible to get copies of the recommendations through the governors, but I, personally, prefer not to speak because I promised those governors we would make recommendations to them only.

If they thought those recommendations were good and they wanted to pass them on, they could.

Senator BIBLE. Do you have any indication as to when those governors would report to this committee, because the sands of time are running out, particularly in the tungsten program, which has 6 or 7 weeks to go.

If they are going to make a report to us, which could be helpful to us in our common cause of helping the mining industry, we had better have it pretty quickly.

Mr. WILLISTON. Senator Bible, Governor Russell of Nevada is the chairman. It is up to him. He has called the Western Conference of Governors, I believe it is for late this month or early May. I expect at that time it will be a unanimous report because individually they have accepted it.

Senator BIBLE. Thank you very much.

Mr. WILLISTON. There were some 13 or 14 governors there.

Senator BIBLE. I think it might be helpful to the committee, Mr. Chairman, and I suggest that our staff members, through you, as chairman, follow it up and urge them to get their report in very quickly because time is running out.

The CHAIRMAN. You are absolutely correct.

Mr. WILLISTON. Governor Knight gave it very good support.

Senator BIBLE. I am sure it would be helpful to the committee and Senate and possibly helpful to the Department of the Interior.

Mr. REDWINE. Mr. Williston, how many producers are there of mercury in the United States today?

Mr. WILLISTON. I would say there were probably 25 or 30, but there are about 6 that produce 85 percent of the total.

Mr. REDWINE. Mr. Williston, in the event the industry does have to close down, how many people would be thrown out of work, roughly?

Mr. WILLISTON. I would say a thousand, fifteen hundred; something like that. The States involved would be Alaska—these are producing or former producers and potential producers—Alaska, Washington, California, Arizona, Idaho, Nevada, Texas, and Oregon.

Mr. REDWINE. Mr. Williston, do you care to comment on any of the other bills that the committee is considering other than the mercury bill?

Mr. WILLISTON. I feel that I could only be of particular use on the mercury bill. We are not mentioned in the omnibus bill. I did not pay too much attention to it because we were not named.

So far as the antimony bill is concerned, we have what are probably the second largest reserves of antimony. If there is a bill passed on antimony, we can produce it.

If there is not such an act, we won't try.

Mr. REDWINE. Mr. Williston, would you have any objection, if the committee saw fit at the conclusion of this hearing, to recommend or report out a bill including mercury in the omnibus bill, or do you think that it should be separate legislation?

Mr. WILLISTON. Personally, I would be inclined toward separate legislation, but I am perfectly willing to bow to whatever the Senators feel is politically the most feasible thing to do.

I give you our position: We can get by with $250. If nothing happens, it will be the end of the industry, and that industry is not strictly a strategic metal industry. It is a hundred years old, continuously.

Mr. REDWINE. This industry that is producing 18,000 flasks a year is a rather substantial taxpaying segment of the Nation, is it not?

Mr. WILLISTON. In that particular respect, insofar as Nevada is concerned, if the mercury industry goes down and the tungsten industry goes down, there will be three bankrupt counties in the State that I know of.

Senator DWORSHAK. You said, Mr. Williston, that the Government was not buying any mercury from your concern. Do you know whether any purchases for the stockpile are now being made?

Mr. WILLISTON. Italy and Spain.

Senator DWORSHAK. At what price?

Mr. WILLISTON. I don't know the present prices. They contracted a year ago for the total output of Italy and the total output of Spain through a group of brokers in New York, with guaranteed profits to the brokers, at prices considerably below the market at that time.

That is the reason the prices went up. I think the price was $175.

Senator DWORSHAK. You do not know what prices are being paid at the present time?

Mr. WILLISTON. I do not know; probably at market.

The CHAIRMAN. If there are no other questions, thank you very much, Mr. Williston.

Mr. WILLISTON. Thank you, Mr. Chairman.

The CHAIRMAN. Are there any other witnesses on mercury?

Mr. REDWINE. Mr. Chairman, if we may, I would like to break our order at this time and hear Mr. Montgomery on beryl and columbium-tantalum, S. 3485 and S. 3486.

The CHAIRMAN. All right, Mr. Arthur Montgomery.

Mr. REDWINE. May the record show that a letter from the Office of Defense Mobilization and an adverse report was received on S. 3485, S. 3486, and S. 3497.

The CHAIRMAN. Yes.

(The material referred to is as follows:)

EXECUTIVE OFFICE OF THE PRESIDENT,
OFFICE OF DEFENSE MOBILIZATION,
Washington, D. C., April 19, 1956.

Hon. JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
United States Senate, Washington, D. C.

DEAR SENATOR MURRAY: This has further reference to your letter of March 23, requesting our comments on S. 3485, a bill to encourage the discovery, development, and production of columbium-tantalum bearing ores and concentrates in the United States, its Territories, and possessions, and for other purposes.

The proposed bill would extend to June 30, 1961, the termination date of all purchase programs designed to stimulate the domestic production of columbium-tantalum bearing ores and concentrates.

Columbium-tantalum purchase programs were established by the Government under the Defense Production Act early in the Korean war to encourage expansion in supply from both domestic and foreign sources for industry and stockpile needs. At that time, both metals were in critically short supply for defense requirements, columbium being essential in super alloys used in jet engines, and tantalum having critical importance in incapacitors and electronic tubes.

Under these circumstances, the Government guaranteed to purchase 15 million pounds of contained combined columbium-tantalum pentoxides, equivalent to about 11 million pounds of contained metal. The price schedule established base prices for material of minimum content and provided for payment of higher prices for higher grade material. In addition, a bonus of 100 percent was paid by the Government to the producer of the metal. Termination date of the program was December 31, 1956, for foreign purchases and December 31, 1958, for domestic purchases. The full 15-million-pound quota was obtained by the end of 1955, at an average cost of $4.30 per pound, including bonus.

The proposed legislation would extend the termination date of programs to stimulate domestic production to June 30, 1961, and provide that changes in specifications and price schedules be no less favorable to producers than those in effect on January 1, 1956. The bill would not, however, establish an additional quota for domestic purchases.

The Office of Defense Mobilization, in cooperation with its delegate agencies, is responsible for determining the adequacy of materials to meet defense and stockpile needs. The Congress has provided adequate authority and funds for all actions necessary at this time to assure the availability of materials for an emergency. At present, Government inventories of both columbite and tantalite exceed the minimum and long-term stockpile objectives for these materials and future deliveries of both materials under firm commitments will develop large overruns of the objectives. Furthermore, present Government inventories of each material substantially exceed the mobilization requirements.

In view of the foregoing, a defense justification cannot be established for extension of the termination date of the domestic purchase program and accordingly we do not recommend enactment of S. 3485.

In the event that further extension of the program becomes necessary to meet defense requirements, it is our opinion that existing authority is adequate for the purpose.

The Bureau of the Budget advises that it has no objection to the submission of this report.

Sincerely yours,

ARTHUR S. FLEMMING, *Director.*

EXECUTIVE OFFICE OF THE PRESIDENT,
OFFICE OF DEFENSE MOBILIZATION,
Washington, D. C., April 19, 1956.

Hon. JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
United States Senate, Washington, D. C.

DEAR SENATOR MURRAY: This has further reference to your letter of March 23 requesting our comments concerning S. 3486, a bill to encourage the discovery, development, and production of beryl in the United States, its Territories, and possessions, and for other purposes.

The minimum stockpile objective for beryl has been achieved. The Defense Production Act domestic purchase program for beryl, which will not expire until June 30, 1957, or when 1,500 short tons have been delivered to the Government, whichever is earlier, and commitments made by the Commodity Credit Corporation will result in the further accumulation of large amounts of beryl. In addition, there are research programs in process which may result in the development of new techniques for beneficiating plentiful low-grade domestic ores.

In view of the foregoing, our relatively satisfactory defense position in beryl, and the fact that the domestic purchase program will not expire for some time, it would appear that there are no adequate data available on which to base a conclusion that the present domestic purchase program should be extended until June 30, 1961. It is our opinion that existing authority provides a flexible tool for undertaking whatever additional type of program may be found necessary to meet our defense requirements for beryl, including an extension of the present program. In view of the foregoing, we do not recommend the enactment of S. 3486.

The Bureau of the Budget states that it has no objection to the submission of this report.

Sincerely yours,

ARTHUR S. FLEMMING, *Director.*

EXECUTIVE OFFICE OF THE PRESIDENT,
OFFICE OF DEFENSE MOBILIZATION,
Washington, D. C., April 19, 1956.

Hon. JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
United States Senate, Washington, D. C.

DEAR SENATOR MURRAY: This is in further reference to your letter of March 23 requesting our comments concerning S. 3497, a bill to encourage the discovery, development, and production of mercury in the United States, its Territories, and for other purposes.

This bill contemplates the extension of the current mercury purchase program to June 30, 1961, or until a total of not less than 125,000 flasks of domestic mercury have been acquired at a price of not less than $275 a flask.

Since the price of mercury has exceeded the Government guaranty, very few flasks have been delivered to the Government under the present expansion program. The Government's price guaranty through December 31, 1957, however, has nevertheless been an important encouragement to domestic production.

A recent review of the mercury situation reveals it to be relatively satisfactory from a defense standpoint. We plan, however, toward the end of this year to make a complete and detailed survey of our defense position on this material. If this survey indicates the need for continuation or modification of the current program, existing authority (provided by the Defense Production Act of 1950, as amended) is adequate for such purposes. The current program is of course being carried out under the authority of that act.

In view of the above, the enactment of S. 3497 would not appear to be necessary from the standpoint of defense.

The Bureau of the Budget advises that it has no objections to the submission of this report.

Sincerely yours,

ARTHUR S. FLEMMING, *Director.*

Mr. REDWINE. Will you state your name and official connection?

STATEMENT OF ARTHUR MONTGOMERY, DEPARTMENT OF GEOLOGY AND GEOGRAPHY, LAFAYETTE COLLEGE, EASTON, PA.

Mr. MONTGOMERY. I am Arthur Montgomery, private owner and operator of the Harding Mine, Dixon, N. Mex., and also a teacher of geology at Lafayette College, Easton, Pa.

I don't have a prepared statement.

I appreciate very much the chance to speak in behalf of the beryl bill. I speak in behalf of that bill as one of the largest producers of beryl in this country. I am 100 percent in favor of this bill, S. 3486, to continue the present purchase price of beryl until 1961.

My chief reason for being so strongly in support of it is that my own case is a good example of what Government support and a good price can do to produce something that is very strategic and very critical.

Beryl is becoming more so all the time.

Senator BIBLE. In that connection, exactly where is it used?

Mr. MONTGOMERY. It is being used a great deal in atomic energy applications. It is being used in nuclear reactors now, more and more. And a lot of secret uses in connection with atomic energy work.

Senator BIBLE. Those are the critical uses you mentioned?

Mr. MONTGOMERY. The most important industrial use is an alloy with copper, beryllium copper, which is a very important and strategic alloy, also.

Senator BIBLE. Thank you.

Mr. MONRGOMERY. This is one mine and this one mine has produced, I think, somewhere around 20 percent of the total United States production since 1950.

The CHAIRMAN. Where is this mine located?

Mr. MONTGOMERY. Dixon, N. Mex. That is north central New Mexico between Santa Fe and Taos, a very small place.

This 20 percent of the total domestic production has been largely, I would say almost entirely, the result of the Government purchase program, the encouragement from that program, a good price.

I began looking for beryl at this mine when the price went up in 1949, and we have been finding a great deal of it, and I believe we have produced somewhere between 600 and 700 tons of beryl. This has almost entirely gone to the national stockpile.

I think this one mine has produced most of the beryl that has gone into the national stockpile.

I started producing therein 1942 because of an interest in tantalum. There was a small production of tantalum in 1943, 1944, and 1945. That was the only tantalum that was produced in this country during the war. That was done largely because of the great need for tantalum at that time. That is how I got started in it.

Senator BIBLE. What is the price of beryl?

Mr. MONTGOMERY. The present price is $50 a short ton unit of BeO, which in simple language means if your beryl runs 10 percent BeO, the price would be $500 a ton. In other words, the percentage of BeO varies with the grade of beryl itself. Beryl can run anywhere from 10 percent BeO to 13 or 14 percent BeO.

Senator BIBLE. Is a unit of beryl like a unit of tungsten?

Mr. MONTGOMERY. It is the same sort of thing. It is the contained BeO percentage. This would be $500 to $550 a ton at the present time.

Secondly, I would like to say that I do not believe that I will go on trying to produce beryl in the future if this bill does not go through, because it would mean that I would have to depend on private industry to purchase beryl, and I do not think that industry is particularly interested in supporting small producers of some of these rare and critical things.

I don't think it is their business to really. They have to depend on large tonnages. Those large tonnages come in from some foreign country, and it is to their advantage to think in terms of those large-scale productions. They are not interested in encouraging and supporting domestic production. I know that is true in beryl. Probably the same in columbium and tantalum.

Senator DWORSHAK. What is the Government price for beryl?

Mr. MONTGOMERY. The Government price is $50 a ton.

Senator DWORSHAK. What is the industry price?

Mr. MONTGOMERY. At present about $37 a unit. On 10 percent BeO it would be $370 a ton instead of $500 a ton, a difference of about $13 a unit.

Senator BIBLE. How long does your program have to go under the present law which you are now operating?

Mr. MONTGOMERY. June 30, 1957, is the termination, but there is a tonnage limitation there.

Senator BIBLE. How close are you to that tonnage limitation?

Mr. MONTGOMERY. Again I am not sure about this sort of thing. Apparently not close enough—I guess we are getting pretty close to the limit.

Senator BIBLE. You have a limitation similar to the tungsten industry?

Mr. MONTGOMERY. Yes, and if those tons are fulfilled before the expiration date the program ends.

Senator BIBLE. Do you have an approximation of when the program will end? Is there someone who can speak with authority on that? Who keeps the books on it, GSA?

Mr. MONTGOMERY. Yes; GSA. I had to ask for that information from General Services Administration.

Senator BIBLE. If I was in your position running a mine in Dixon, N. Mex., running a beryl mine, I would certainly want to know when the Government program was going to terminate. I think in fairness you should certainly be advised of those figures. I cannot see how that is classified as critical.

Mr. HOLDERER. May I answer your question?

On the GSA purchases the time limit expires in June 1957. The actual purchase, the quota, will be fulfilled by December of 1956.

Senator BIBLE. That is not classified?

Mr. REDWINE. Not on the domestic picture, but the overall stockpile.

Senator BIBLE. I am not asking for stockpile figures. I am asking when Mr. Montgomery will be advised that he will no longer receive the support he is receiving under existing law. Your answer is that as best calculated now the program will run out about December of this year, 1956?

Mr. HOLDERER. That is correct.

Mr. MONTGOMERY. I think one of the advantages of this bill, if I understand it correctly, is that there would not be a specific tonnage limitation, but that it would be a 5-year definite guaranty of purchase of domestically produced beryl.

That is the way I understand the bill. There is no mention of a tonnage limitation in it.

Senator BIBLE. How many beryl producers are there in the United States?

Mr. MONTGOMERY. There are quite a few, because beryl is produced as a byproduct of feldspar and mica mining, but there are several large ones, the Bland Mining & Milling Co. is one of them, and I am another.

Two of us perhaps produce together nearly 50 percent of this beryl production in the last 3 or 4 years.

Senator BIBLE. Your testimony was that you produced 20 percent?

Mr. MONTGOMERY. Somewhere around that figure.

Senator BIBLE. How big an operation do you have?

Mr. MONTGOMERY. We have four men and a mule and very small equipment.

Senator BIBLE. I think that is wonderful, because that is how this great country of ours and its mineral wealth was discovered, is with four men and a mule.

Mr. MONTGOMERY. I would like to say two things more, if I may, without taking too much time. One is that I feel it is very important to stress that there are two elements present in Government stockpiling. This is my approach to Government stockpiling.

One is to have a sufficient supply of some strategic and critical material on hand in case we need it at a critical time.

And secondly, to encourage and help domestic production of these things.

Sometimes that second element is not, it seems to me, sufficiently advanced and supported. In some of these rare things like beryl and columbium and tantalum, it is important to have people looking for these things and finding them and finding new deposits, because in the future if we get into trouble and have to have these rare things and need them more and more, if domestic production is stopped entirely, how in the world are you going to start it up again in a hurry and produce these things?

I think that sometimes is forgotten.

The CHAIRMAN. I think that is the most important element.

Mr. MONTGOMERY. I feel so.

Senator DWORSHAK. Where is most of our beryl coming from now; what countries?

Mr. MONTGOMERY. Brazil, Madagascar, many far-off places, south Africa, Southern Rhodesia, Mozambique, southwest Africa.

Mr. HOLDERER. Fifty percent from Africa.

Senator DWORSHAK. What percentage of our total domestic consumption is being produced in this country?

Mr. MONTGOMERY. About 10 percent or a little less.

I would like to say one more thing, if I may. I understand from what you said a few minutes ago that there is an adverse report on the beryl bill from the Office of Defense Mobilization.

The CHAIRMAN. Is that right?

Mr. REDWINE. Yes.

Mr. MONTGOMERY. I would like to speak about this. I think that is an entirely unrealistic opposition. We had a meeting on the beryl problem. I am a member of the Beryl Advisory Committee to the Office of Defense Mobilization.

At our meeting I do not think we came out with a very realistic conclusion as to the situation in beryl at this time in regard to domestic production. I think that it was brought out very strongly at that meeting that we had that there are some very large-scale, very low-grade deposits of beryl in North Carolina, in the Kings Mountain area of North Carolina.

There are some companies that are mining lithium ore in that region at this time. The Foote Mineral Co., particularly, and there is a possibility that this beryl could be recovered as a byproduct of the lithium mining.

It would have to be produced by a method that has never been successful so far on the production of beryl, the recovery of beryl, that is flotation. It has not worked so far.

The Bureau of Mines has done excellent work on this, but it is a complete question mark at the present time whether this beryl can be successfully recovered from these operations and also whether it ever will be because it depends in part on something else entirely, lithium: The status of the lithium industry and whether the people are mining lithium and whether it can be produced, whether beryl can be produced as a byproduct.

I think that this adverse report from the Defense Mobilization people on beryl is largely based on that material, that substance.

So I think it is unrealistic.

Mr. REDWINE. You mentioned a moment ago about your advisory group. That advisory group works with the Department of Interior, the Office of Minerals Mobilization rather than the ODM.

Mr. MONTGOMERY. Yes; it is Minerals Mobilization. Excuse me if I said that incorrectly.

Mr. REDWINE. The industry has no group relationship with ODM at all?

Mr. MONTGOMERY. Well, if ODM is separate from the Mineral Mobilization, it has not.

That is all I have to say. If any of you gentlemen wish to ask me questions, I will be glad to answer them.

Senator BIBLE. There is one sentence in the adverse report that is rather interesting:

> In view of the foregoing, our relatively satisfactory defense position in beryl—

which is the same language which was used insofar as mercury is concerned in that respect.

But the second sentence is of some significance to me:

> And the fact that the domestic purchase program will not expire for some time, it would appear that there are no adequate data available on which to base the conclusion that the present domestic purchase program should be extended to June 30, 1961.

The only comment I would make, Mr. Chairman, is that if they feel that "sometime" is from now to December of this year, it is rather unrealistic. That is only 8 months away.

Thank you, Mr. Chairman, I have no further questions.

The CHAIRMAN. Thank you, Mr. Montgomery, for your very fine statement.

Mr. MONTGOMERY. Thank you very much, Mr. Chairman, for the opportunity.

Mr. REDWINE. Mr. Bland, will you state your full name and connection, industry connection?

STATEMENT OF GEORGE C. BLAND, BLAND MINING & MILLING CO., CUSTER, S. DAK., AND CHAIRMAN OF BLACK HILLS MICA PRODUCERS ASSOCIATION

Mr. BLAND. George Bland, of Bland Mining & Milling Co., of Custer, S. Dak.

Mr. REDWINE. Is your company the Bland Co. that Mr. Montgomery just referred to a few minutes ago?

Mr. BLAND. That is correct, yes.

Mr. REDWINE. Will you please go ahead?

Mr. BLAND. In the beginning of the program, about the time this program started, we discovered this deposit of beryllium. It is not a high-grade deposit. It is made up of massive beryllium instead of the crystal type that is predominant in most mines.

Senator BIBLE. This discovery was made in Custer, S. Dak.?

Mr. BLAND. Yes.

Senator BIBLE. Thank you.

Mr. BLAND. And the miners produced quite a large tonnage of this material. I think Mr. Montgomery's material tests about 11 to 13 percent.

In ours, beryllium itself is high grade, but you cannot separate it completely from the waste material so that our product runs from 8 to 9 percent when it is cleaned and as cleanly as we can get it. We have produced in the neighborhood of 500 tons of that type of material in about 3 years.

Senator BIBLE. Is that a byproduct of mica?

Mr. BLAND. No. We have scrap mica only, which is a low-priced product. There is, however, lithium ore coming in conjunction with the beryllium. We are sinking on this deposit now and approaching water level.

Our costs of mining are going to increase from now on, as well as the apparent cost in the cost of living which has taken place since the initiation of the program.

With the short time limit that is left to us, we don't feel that we should spend too much money to sink and develop a mine to the extent that it would cost us considerable money. We have to take just what is readily available and if the program were to be extended to 1961, why, it would encourage us to go ahead with production.

The CHAIRMAN. Are there any questions?

Senator BIBLE. How many people do you employ, Mr. Bland?

Mr. BLAND. In the operation of the beryllium we employ about fifteen men.

Senator BIBLE. Do you operate your Black Hills Mica Producers Association in connection with your berryllium? Or are the two separate and independent mining companies?

Mr. BLAND. The Mica Producers is a local organization of all the miners. They chose me to represent them.

Senator BIBLE. You employ 15 men in both mica and beryllium?

Mr. BLAND. No; that just covers the beryllium. We have separate mines which can be mined for mica, also.

The CHAIRMAN. Are they operating now?

Mr. BLAND. No; they are not. We have been out of production in the mica business for about nine months, due to conditions which we don't feel are fair at all.

Senator BIBLE. What do you mean by that?

Mr. BLAND. They have a system of grading mica which is based on very insecure standards. One time they can say it is very good and bring you $70 a pound.

Senator BIBLE. Who is "they"; GSA?

Mr. BLAND. The General Services Administration. We have submitted our mica to the people who the General Services claims are the standard that they are going by and these people come back and say that the General Services is not grading it according to their standards.

We have that evidence to show. We have statements of people who are connected with the GSA that they have looked at mica at other deposits and the grading is approximately two grades higher than what we are able to get on our same type mica.

It makes a difference of, well, it is a very great difference. It is between $50 a ton what we can mine and seventy or eighty dollars.

The CHAIRMAN. You have discussed those matters with the Government agencies?

Mr. BLAND. We have been trying to get them for 3 years to set up a set of visual standards we can go by from ASTM. They have an inspection department which is apparently not responsible to GSA. Yet the GSA seems to give them instructions.

It is a situation that is hard to understand. We would like to see read in the law that the ASTM adopted as the standards, which is a matter of law.

The CHAIRMAN. Are there any other questions of this witness?

If not, thank you, Mr. Bland.

Mr. BLAND. I might add that I think we could produce a large quantity of mica if it were equitably and fairly done. We don't ask for any special treatment at all, just some standard.

Mr. REDWINE. Mr. Chairman, we are going to have to again weave in and out of our agenda.

May we call Mr. Li, K. C. Li, in respect to tungsten, S. 3379.

We have no report from any Government agency on this bill.

The CHAIRMAN. What is the reason you have no report?

Mr. REDWINE. We requested a report in writing on three different occasions and in numerous telephone calls. We have been advised by Interior that they will be unable to furnish us with a report before sometime next week.

They have been 5 or 6 weeks preparing the report we have not received.

The CHAIRMAN. Will you state the name and industry you represent?

STATEMENT OF K. C. LI, PRESIDENT, WAH CHANG MINING CORP., NEW YORK, N. Y.

Mr. LI. My name is K. C. Li, a director of Tungsten Institute and president of Wah Chang Mining Corp., Bishop, Calif.

Mr. Chairman and members of the committee, first of all, allow me to thank you for permitting me to testify before my friends who have yielded the floor to me. I shall be brief and, if you will permit me, I would like to make a statement, after which I shall submit myself to examination and cross-examination.

Wah Chang Mining Corp. operates two domestic tungsten mines, one in Benton, Calif., and the other in Tempiute, Lincoln County, Nev. Both of these mines were begun and developed as a direct result of the Government's program to encourage the discovery, development, and production of domestic tungsten under the GSA–113 purchase program which was inaugurated because of the alarming shortage of tungsten during the Korean incident.

The Wah Chang mines are the largest tungsten mines developed under the GSA–113 program. They represent today one of the largest tungsten operations in the United States, producing, at the present rate, over 12,000 units per month (March 1956, 12,500 units).

The approximate production since the Wah Chang mines were opened in 320,000 units of WO_3. These mines, as evidenced by their production, have become significant in the tungsten production of the United States, and if operation and development are continued, they could contribute substantially toward making this country independent of foreign tungsten supply in the event of emergency, the original laudable purpose for which the GSA–113 program was inaugurated.

Realization of this aim will not be possible if the GSA–113 program is not extended by the Government. The Wah Chang properties were acquired in 1951, and it was not until 1954, a period of 3 years, that any returns from the operation were at all possible. In those 3 years, the company sank $5½ million into exploration and development on the properties without one cent of return. This is not unusual in mining operations of this kind. The GSA–113 program was expected to expire in June 1958, but the 3-million-unit quota will be completed in June 1956, thus 2 years ahead of the scheduled time. The Wah Chang mines have had only 2 years of operation which is insufficient time for any mine to recover its investment.

Like all American producers, we face a great disadvantage in competition with foreign producers because of the much higher cost of domestic labor and materials. The fact is that our mines were developd in a period of tension at extremely high cost and cannot compete with foreign mines whose production cost is lower and whose grade of ore, to begin with, is higher. Discussion before the establishment of the GSA–113 program took cognizance of the economic disadvantages under which tungsten producers in this country would operate before the industry could become sound economically. It is heading in this direction but needs further nurturing to achieve its objective. I do not think any American tungsten mines that came into being as a result of the GSA–113 program can survive the foreign competition if the program is not extended.

In our own case, I should like to point out, if I may, some of the already established benefits that will be conserved for our economy if the proposed extension of the GSA–113 program makes possible the uninterrupted operation and continued development of the Wah Chang mines.

A mine does not come into being overnight. Deposits have to be explored, developed, reexplored: mills have to be erected, flowsheets have to be changed and construction has to be redesigned. At Benton, we had to drill, at considerable expense, our own wells 8 miles away and build our own powerline 23 miles away from the mine. At Lincoln we had to build a town in the wilderness, which is now the fourth largest town in the State of Nevada.

Years of briliant effort on the part of able mining engineers, geologists, and metallurgists have developed two mines possessing tungsten reserves that make them a definite national asset in time of emergency, as well as in time of peace. We all know that once an operation is shut down, the facilities will be liquidated or abandoned, the mine will be flooded and caved in, and the tungsten reserves destroyed. To have this happen to all or any substantial number of the tungsten operations opened in the past few years would be a tragic waste of our national resources and a threat to our future defense. But that is exactly the fate which is envisioned by domestic tungsten producers who will be unable, should the GSA–113 program not be extended, to carry on in the face of foreign competition.

To continue with our own case, I should like to mention that we at Wah Chang, because of the complex nature of the ores encountered in Benton and Lincoln, where our mines are located, have had to undertake extensive research to develop a process to mill the ore to specifications. Such a process, at considerable cost and many headaches, has finally been achieved. In its development, our technology has been advanced and our experience increased. Similar progress has characterized the operations of other domestic tungsten producers. This progress in technology and exprience may be counted as one of the unexpected dividends of the GSA–113 program. Yet it would be wise, from the viewpoint of future national defense, to remember that progress must develop in a continuum. The techniques, skills, and experience of thousands of trained tungsten workers allowed to die today will not be susceptible to quick revival in a time of possible future emergency such as we have already experienced in our national history.

Research in tungsten alloys has already shown that in the jet missile age, it will be tungsten, and not the new "magic metals" which will be indispensable, for the big problem is the heat barrier. Despite the claims recently made for new alloy combinations, tungsten alloys are still the only ones which defy "metal fatigue," because tungsten has the highest recrystallization temperature of all metals, including columbium, tantalum, and molybdenum. Our engineering progress in the years to come depends to an unappreciated degree not only on tungsten, but on continued research in tungsten and on advancement of our tungsten techniques. To threaten the development of this progress would, I think you will agree, be a disservice to America.

Tungsten has been proven as a metal unequaled in its quality by any other metal and it must be used in the manufacturing of both arma-

ments and ammunition. The idea that the present stockpile is too much is more of fiction than of actual facts. When material is not required at the moment any amount of stockpile is too much. But when use is activated and accelerated in time of war, as had happened thrice in the past 40 years, whatever stockpile we have will not be enough.

I believe an extension of the GSA–113 purchase program would, in the long run, save the taxpayers money. During the First World War, tungsten sold as high as $100 per unit. During the Second World War, tungsten grew so scarce it had to be flown from China to the United States and its use had to be curtailed and allocation resorted to. When the Korean incident broke out, matters became worse: the Government had to limit the price to $65 maximum, while the world market was $90, the basis for inaugurating the GSA–113 program.

At $65 per unit, domestic producers have delivered to the Government many units against the then world price of $90 per unit. For the 3 million units under the expiring GSA purchase program, the cost to the taxpayers has been only $789 million, a total which is insignificant compared to the amount the Government had to pay for tungsten during 2 World Wars and 1 incident. Tungsten in stockpile is as nondeteriorating as gold in Fort Knox, and ideal to stockpile, requiring a building of only 15 feet high, 440 feet long, 230 feet wide to house the entire 3 million units of 70 percent WO_3.

Planned with vision, the GSA–113 purchase program has made possible some significant national gains. It has enabled the United States to establish the technological leadership in the mining, processing, and refining of tungsten essential in time of emergency. It has made it possible to develop mines with reserves that will last for decades—enough to make us independent of foreign sources into the foreseeable future. Research and development in tungsten must be continued and expanded if we are to maintain our technological position in the future. We cannot afford to sacrifice our achievements at this critical period in our history. It is my conviction that these gains, and this protection of our national future, will be destroyed (not merely jeopardized, but destroyed) if the GSA–113 program is not sufficiently extended to put the domestic tungsten industry firmly on its feet.

In conclusion, Mr. Chairman, I should like to say again that what is needed above all else is an active, effective, and continuous tungstem mining industry ready to serve our country economically in times of peace and in times of dire emergency. Let us not abandon what we have so laboriously put together for so laudable a purpose. It will be a disservice to the principles for which we stand.

The CHAIRMAN. Does that conclude your statement?

Mr. LI. Yes, sir.

Senator BARRETT. Mr. Chairman, I must leave. I wonder if I can take 1 minute. I want to congratulate the witness on the splendid statement he made.

I notice he said that the program was designed to be completed July 1, 1958, but he anticipates it will be finished by June of this year and probably earlier, according to my information.

In connection with the bill, S. 3379, I want to call the staff's attention to the second page. In section 3 of that bill it seems to me that the word "expiration" in line 15 might apply to July 1, 1958, rather than June 1, 1956.

According to the testimony of the witness here we will have completed the program by June 1 of this year, and I think he is right.

So it seems to me after the word "expiration," line 15, we ought to insert the words "or completion of the present domestic tungsten purchase program" and then after the comment on line 16 insert, "Whichever occurs first."

Then we will be certain here that this program would start when we get the 3 million units which I anticipate will come before very long.

Would you make a note of that when this thing comes up?

Mr. REDWINE. Yes, I have.

Senator BARRETT. I want to congratulate the witness. I appreciate the opportunity of getting these words in. I do have some appointments.

Mr. LI. Thank you, sir.

The CHAIRMAN. Thank you.

Senator BIBLE. Mr. Chairman, I just want to pay a particular tribute to Mr. K. C. Li. He is one of the finest mining men in my State. I believe the statement he has made here is an outstanding contribution to our attempt to be of assistance.

I know from firsthand knowledge that at Tempiute in Lincoln County, of which Mr. K. C. Li speaks, the faith he had in the mineral resources in that particular area, the investment he made, was a lifesaver to a dying mining community.

I simply want to pay that tribute to you, Mr. Li, because I think you richly deserve it. Not only that, I want to just comment that he feels so keenly on this question of mining that he saw fit to endow the University of Nevada with two mining scholarships which I think is an additional tribute to him.

I am wondering, how many men, Mr. Li, you have in your operations in California and in Nevada that would be adversely affected if this program was not to be continued.

Mr. LI. Mr. Senator, I most humbly appreciate your remarks.

Our engineers are graduates of Nevada and California schools; they are wonderful engineers. These goods engineers during the past 4 years have developed a process making it possible to treat this ore.

Now, in answer to your question, Senator Bible, in the mining town of Tempiute, Lincoln County, we have about 700 people. In Benton and Bishop we have about 500.

So a total of 1,200 people will be affected if we should close some mines down.

The CHAIRMAN. I am sorry to interrupt you, but I am required to be on the floor. So I will have have to ask Senator Bible to take the chair.

Mr. REDWINE. Pardon me, Senator, Senator Bible is also requested to be on the floor. Could we take a recess now until 1:30, at this time?

The CHAIRMAN. Very well.

Senator BIBLE. I wonder if we could defer to ask a few questions of the witness.

The CHAIRMAN. Yes.

Senator BIBLE. Now, is it possible for you to continue, or will you continue if this program is not continued?

Mr. LI. I am a mining engineer and never say quit, would not say quit. We would continue as long as we could, but my economic sense tells me that without this program we could not continue for long.

Senator BIBLE. In any event, you would not be in operation for long; is that a correct statement?

Mr. LI. Yes.

Mr. REDWINE. In respect to today's world market price for tungsten, you could not operate successfully?

Mr. LI. Today's world market price is about 30, in this country it is about 41½; $42.

Perhaps we can continue for a short while, but the world market, Mr. Chairman, will not remain at that price if 1 million units in this country should be put into the market.

Most of the world producers have contracts with our Government and those contracts will expire gradually.

As they expire, more tungsten will come to the market for sale.

So the present world market will not be able to continue.

Senator BIBLE. I think that answers my question, Mr. Li.

Should you desire, if you care to return at 1:30 you are more than welcome to do so.

I recognize you have certain prior commitments. I think you have contributed much to this committee. We appreciate your coming.

We stand in recess at this time until 1:30 this afternoon.

(Whereupon, at 11:55 a. m., the committee was recessed, to reconvene at 1:30 p. m., same day.)

AFTERNOON SESSION

Senator BIBLE. The meeting will come to order.

Will you call the first witness?

Mr. REDWINE. Is Mr. Bradley present?

Mr. BRADLEY. Yes; may I be heard tomorrow? I just arrived by plane and I do not have my notes in order.

Senator BIBLE. That certainly is a fair request.

We will call the next witness then.

Mr. REDWINE. Is Mr. J. R. Holman here?

Mr. HOLMAN. Yes, sir.

Senator BIBLE. We will be happy to hear from you, Mr. Holman.

STATEMENT OF J. R. HOLMAN, LESSEE AND OPERATOR, MISTAKE CHROME MINE, FRESNO COUNTY, CALIF.

Mr. HOLMAN. My name is J. R. Holman, independent chrome producer in the central portion of California.

Mr. REDWINE. Do you have a written statement, Mr. Holman?

Mr. HOLMAN. Yes; and I would like to preface my written statement with a few comments.

Senator BIBLE. You may feel free to do so and your written statement will be incorporated in full in the record.

Mr. HOLMAN. Thank you, sir.

I believe it is a high credit to the Congress of the United States that they enact such far-thinking programs as was initiated in Public Law

206. I think it is a high tribute to the Congress of the United States when the citizens act on such legislation as is evidenced by the statement of Mr. Li and the development of his tungsten program as a result of such.

I wish to comment in the development of the chromite mines, which have been under my operation, the same is true. They were properties that were unknown at the time that the law was instituted, and in the first 9 months of 1955, 1 of those properties was capable of producing 20 percent of the total purchases received at Grants Pass purchase depot, which shows good does come out of these programs.

Mr. REDWINE. Mr. Holman, the bill you are testifying on is S. 3504, is that correct?

Mr. HOLMAN. Yes, sir. In 1950 only one domestic mine was producing chromite in the United States.

In 1951, as the result of the Korean conflict shutting off imports of strategic minerals, Public Law 206 permitted 2,000 tons from any 1 mine being produced and sold for stockpile reserve.

In 1953, the limitation on tonnage removed and time limit for chrome extended to June 30, 1957.

In 1955, the extension of strategic minerals program for 5 years vetoed by President with a message that the bill was inadequate and a new long-range program would be studied to stimulate and maintain a sound nucleus of strategic mines as a mobilization base. Reference made to the Cabinet report on mineral policies to the President published in November 1954.

In 1956 further time was requested to use up the remaining one-half or $10 million already appropriated to implement the chrome purchasing program. Also in 1956, published reports of the western governors minerals policies conference are apparently universally in accord that not only the State economy but the national welfare demands a strong domestic mining industry.

At the close of 4½ years of development, nearly 3,000 people directly or indirectly employed in chrome mining. Development costs and installed mill capacity in excess of $5 million. Ore bodies in sight or reserves developed, capable of expanding rapidly to 3 to 4 times the 1955 production——

Senator BIBLE. Pardon my interruption. You said it is $5 million. Is that the total invested in the chrome industry?

Mr. HOLMAN. That is what I know of from my own knowledge.

Senator BIBLE. That is not just your own operation?

Mr. HOLMAN. That is not just my own operation.

The ore bodies in sight or reserves developed, capable of expanding rapidly from 3 to 4 times the 1955 production, which approximated 25,000 long-dry tons delivered to Grants Pass purchase depot. The quality of metallurgical grade average is 4 to 6 points higher than foreign imports.

Industry is currently becoming interested in 2 or 3 properties capable of supplying adequate stocks to support a stainless steel or ferrochrome production on the Pacific coast.

Mining is primarily done on Federal lands only available to the exploitation of the citizen and taxpayer. It is not the type of industry to be turned on and off at will, therefore if not maintained, neglect very often wastes completely the resources which might have been available in time of stress.

Present proposed legislation is but a stopgap temporary measure, we appreciate. It is hoped that a long-term protection for American mining, as suggested by the western governors, will eventually be acted upon.

Until August of 1953, this industry never had longer than 24 months ahead to justify plant investment to process disseminated ores or purchase heavy equipment for extended development. The majority of the chrome properties of the limited States lying principally in high mountainous areas of the northern Pacific coast section severely limited production or development to seasonal periods, in some cases as short as 5 months.

In developing the present reserves, this phase of mining had to train 95 percent of all manpower taken from other industries and in many cases fabricate their own equipment for processing.

Careful study of the financial reports and production records of the principal chrome producers in the area confirms the fact that the Government assistance as it has existed, has been no gravy train. In truth, with but 1 or 2 exceptions, the private capital expended has so far exceeded current returns as to reflect tremendous faith on the part of the mining industry that our Government fully intended to back up their announced intentions with continued interest in domestic mineral mining.

I have an additional statement I would like to submit for the record, Mr. Chairman.

(The statement referred to follows:)

APRIL 19, 1956.

Hon. JAMES E. MURRAY,
Chairman, Senate Committee on Interior and Insular Affairs,
Subcommittee on Minerals, United States Senate,
Washington, D. C.

DEAR SENATOR MURRAY:

TESTIMONY ON CHROMITE

In 1950 there was only one domestic mine producing in the United States.

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In 1956 further time was requested to use up the remaining one-half of $10 million already appropriated to implement the chrome purchase program.

In 1956 the published reports of the Western Governors Minerals Policies Conference are apparently universally in accord that not only the State economy, but the national welfare demands a strong domestic mining industry.

At the close of 4½ years of development, nearly 2,000 people were directly or indirectly employed in chrome mining.

Development costs and installed mill capacity are in excess of $5 million.

Ore bodies in sight or reserves developed are capable of expanding rapidly to 3 to 4 times 1955 production, which approximated 25,000 long dry tons delivered to Grants Pass purchase depot.

Quality of metallurgical grade averages 4 to 6 points higher than foreign imports.

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MISTAKE CHROME MINE, FRESNO COUNTY, CALIF.

1. New discovery (marginal, ore), lode claim filed May 27, 1953.
2. The only consistent producer in volume for California of 48 percent CR–203 3-to-1 iron ratio.
3. Developed directly as result of DMPA Act, 1951.
4. Put into production with 100 percent private capital.
5. Current production rate 4,000 long dry tons annually.

Direct sales to chrome ore purchase depot, Granite Pass, Oreg. January 1 to June 30, 1955—$127,112 average price 110.70 long dry tons.

(NOTE.—Balance of sales sold by other mills in neighborhood who processed and sold as their product.)

Direct freight to Oregon depot for assay purposes only, since no plan set up to buy f. o. b. rail car—$27,654 equals 21.75 percent of total sold.

(NOTE.—If this could be assayed and bought at Coalinga, it would not only save 21.75 percent of the basic price but also the Government expense of handling and reloading at the Oregon depot.)

Total labor, 6 months at mine, mill, plus operators of trucks and tractors	$27,042
Parts, supplies, and equipment, 6 months	46,927
Royalties paid, 6 months	26,882
Labor burden expense, at 13 percent of $27,042	3,516
Employee income tax, at 14 percent of $28,042	3,785
Average indirect tax on supplies, etc., at 25 percent of $46,927	11,731
Average indirect tax on employees, net after income tax, at 15 percent of $23,257	3,488
Direct income taxes on lessee net income	10,000
Direct and indirect taxes on royalties paid, at 20 percent of $26,882	5,376
Taxes and labor burden total (27.81 percent)	37,896

SUMMARY

	Percent
Percentage of price for assay only	21.75
Percentage of price for taxes plus	27.81
	49.56
Average price for product, $110.70 less 49.56 percent	$55.84
Latest quote on Pakistan ore, 48 percent 3–1, $44 to $45 per ton f. o. b. cars New York, $45 +25 percent per Buy American Act 1934	56.25

You can see from this that there is very little subsidy if any over current foreign quotations. And when you consider that considerable tonnage of chromite bought for stockpile purposes by General Services Administration, was at prices up to and including $65 per ton, it put the figures in reverse.

This picture is not complete until you learn that through the encouragement of this one successful mining venture, the writer was influenced to back other chrome mining operations to the extent of the following capital investments:

James-Corbett lease	$1,500
Wonder Mine, Curry County, Oreg	70,000
James Mining Co., San Benito County	25,000
Thickstun State lease, sec. 36	7,500
Total	104,000

So far J. R. Holman is not even with the board for his efforts to support the development of strategic mineral mining in a program of such short duration.

How can anybody justify such investment of private capital without—

1. A realistic approach to price?
2. A long-term program with escalator provision?
3. A proper approach to research?
4. A realistic tax advantage?

J. R. HOLMAN,
Lessee and Operator, Mistake Chrome Mine,
Fresno County, Calif.

Mr. HOLMAN. Frankly, Mr. Chairman, with this bill S. 3504 as submitted extending the program for 5 years, we believe that there is very nearly enough money already appropriated to carry that, especially if some time within that period other long-term recommendations should come along or possibly ODM might see fit to vary the program with purchases in carlot arrangements from the western producers.

Now, at the time the program was originally instituted there was no arrangement made for milling or carlot shipments and as a result it is a severe penalty on some of us for shipping to Grants Pass and then having the Government pay the freight to get it back to stockpile.

We believe we could take a little less money under a program which would make the $10 million last longer. In other words, I am suggesting no change whatsoever from the bill as submitted but I simply suggest that there is a way to stretch what would normally be 3 years of money left in the program, which is now scheduled to end June 30 of 1957. By using that $10 million wisely it will reach the 5 years without needing additional funds to implement a chrome purchase program.

The CHAIRMAN. Transportation cost often has a very important influence in the chrome mining industry?

Mr. HOLMAN. Yes; because in practically every instance the chrome is in isolated areas, particularly in the Northwest. Throughout the Klamath district, the Siskiyou and the Southern Oregon district, transportation costs run very, very high. Where we are operating in the Diablo Range between Coalinga and King City, we do have rail facilities within 35 miles of our farthest point, but the sad part of our situation is the fact, that the only way it can be sold is to deliver it to Grants Pass over the scales by truck, where it is assayed. It makes a duplication of transportation cost for the reason that we pay the freight to have it assayed. Then the Government turns around to pay the freight to get it out of the purchase depot into stockpiles areas.

In my particular case, on approximately $200,000 worth of gross receipts, 21.75 percent of my gross went strictly for transportation for assay purposes.

The CHAIRMAN. We have some considerable deposits of chrome in Montana. We had some concern in attempting to undertake the development of this property but they found that the freight rates were prohibitive. They had to ship the ore from the mines some considerable distance to get access to power. So they folded up and went to Memphis, Tenn., and bring chrome ore all the way across Africa and process it there in Memphis, Tenn., profitably, which very much disturbed us out in Montana to see a wonderful deposit of chrome existing there ready to be developed but we did not have the power available at the point. We would have to ship the ore some considerable distance to get it over to where they could get power.

Mr. HOLMAN. That is right. You can't afford to give it a ride too far. Even in the contracting business, you have to remember that the shorter you give your material a ride for any purpose the better it is. In mining the same is true, whether it is for milling or whether for final ferrochrome use.

The CHAIRMAN. There is plenty of chrome in the country, is there not, if it was developed?

Mr. HOLMAN. Mr. Chairman, as a committeeman functioning under the Oregon Mining Association for 4 years, having traveled at my own expense to visit the majority of the mining and milling operations in California and Oregon, I am firmly convinced that with a continued program the Nation, in case of stress, could be entirely self-supporting.

As a further confirmation, the district in which I am working at present is confirmed by the Geological Survey report on chromite in the southern coast ranges in California—Bulletin 134. It shows the peridotite section 25 miles long and nearly 15 miles wide. I was the only man to open up anything in this area.

In the last year there have been a group of engineers, unbeknownst to me, and I have just learned it recently, go through that territory from Fresno to San Benito County and south to Kings County. They took innumerable samples throughout that district, and they were amazed at their findings. They say it is the biggest thing that has ever been opened up in the United States in chrome, and it has been absolutely neglected except for a little scalping of high-grade massive float which was found during World War I and World War II. But the ore in the main is in disseminated form. It takes a milling procedure to make it marketable. We started with a small pilot plant, and from that small pilot plant we found that the disseminated ore, as we progressed, in depth in the formation, becoming richer and richer. We produced in the first 150 feet downwards, from a comparative narrow lead, 20,000 tons, only approximately 2 carloads of massive ore, but the balance an exceptionally high concentration rate of chrome content in the disseminated mass. Within the next 50 feet the 5,000 tons of ore produced 4 to 5 carloads of massive.

The ore body, when it became involved in litigation last year in this particular mine, where it had started with a 2-foot-wide lead up to 6 feet wide in the distance of 75 feet, had now reached dimensions in the pit floor 160 feet long and 65 feet wide, which proves that chromite, if we once can spend the money for the development, will surprise the Nation as to the quantities that are available.

The CHAIRMAN. There are many new uses that chrome could be put to in this country, in addition to those already in existence?

Mr. HOLMAN. I do not know about new uses particularly, but I do know from the record that the importations of metallurgical grade chromite jumped in the year 1955 for the first 6 months to 800,000 long-dry tons, almost 60 percent of which was used to make ferro alloy metal.

From the figures that I have observed up to the third quarter it looked very much as though they were maintaining exactly the same rate without increasing industry inventories by the end of the year. In other words, 1955 would exceed 1½ million tons of cromite imported and used.

When you consider that so far we have only hung up a record domestically of between twenty-five and thirty thousand tons annually of metallurgical grade produced on the Pacific coast it does not sound like much, but then review what period we have had to operate on: We have had only 24 months at a time virtually, to stimulate investment, and in some districts we only had 5 months in which to operate.

I think we have made a rather astounding record, but we still have 10 million left and we still need the continued support of the Congress and particularly that bill 3504, if it were extended, would be a tremendous assistance and stimulus to those chrome producers who are still active.

The CHAIRMAN. Thank you very much.

Mr. REDWINE. May I ask a question, Mr. Chairman?

The CHAIRMAN. Yes.

Mr. REDWINE. Mr. Holman, you would like your testimony to go also to the omnibus bill that includes chrome in it or not?

Mr. HOLMAN. Well, if S. 3504 cannot stand on its feet, I would love to have the assist of the combined metals bill. But I can see no particular advantage with it being included with the other minerals especially if the omnibus bill is going to mean a change in the rate of payoff, in other words, we would now have to sell industry direct at world prices and get the difference from the Department of the Interior, even though we get the same money, the change in payments with the manner of receiving money for our work done is going to make a lot of difference to a good many of the chrome producers because a lot of them are still very small operators.

Mr. REDWINE. Let us say, then, the Malone-Barrett bill, which is a straight extension, your testimony would go to that?

Mr. HOLMAN. Yes.

Mr. REDWINE. Let me ask you this: Is it your opinion that this legislation would not call for any additional appropriation by the Congress?

Mr. HOLMAN. Little, if any. At the rate that we produced in 1955, which was in the neighborhood of 25,000 tons, we could probably run a full 4 years without additional funds.

Mr. REDWINE. Other than that which has been set aside?

Mr. HOLMAN. Other than that which has been set aside.

Remember, at the end of 1955 we had produced 101,634 tons purchased through the Grants Pass Depot, costing $9,800,000, out of the original $20 million that was set aside. So we still had at that point half the money. I would like to see us have an opportunity to use it.

Mr. HOLDERER. Mr. Chairman, may I ask a question?

The CHAIRMAN. Yes.

Mr. HOLDERER. How long do you think it takes to develop a property and especially to train new men to become skilled miners and to recognize chromite ore when they see it?

Mr. HOLMAN. Almost 2 years to develop a mine. My boys that have been with me now, some of them, for about 3 years, are becoming a little bit sharp. But it has been an amazing thing to me to discover that chrome in the district I am working in particularly, and that I can speak of from firsthand knowledge, is found in so many different forms of rock. I will venture that I could take 90 engineers in there and over half of them would fail to see it. It has taken 3 to 4 years of constant working with the rock and hundreds of assay reports to prove the values in the formation.

Mr. HOLDERER. So if the mines are closed down, we lose that skilled labor which has taken anywhere from 2 to 4 years to train?

Mr. HOLMAN. That is very true. There is one other point in addition to the labor that you lose. At the present time we are operating on Federal lands. We have been able to accumulate through a brand-new development here, before too many people became interested in our chromite development, to acquire contiguous blocks of acreage. We have no interference titlewise. After having become involved in a lawsuit as I did last year, titlewise, I will tell you it can certainly foul up a mining operation but quick. But if we lose the opportunity to hold this block of mining properties together now, and because of lack of program or lack of funds to carry on with the necessary development or assessment work to hold the possessory title on the lands, it becomes broken up and never again will they operate under as satisfactory a setup or with as low a royalty figure as we have already arranged for in our present properties. So you lose two ways. You lose your trained manpower which you have to start over to develop, and you lose the acreage which would have made a decent, sizable mining operation for the national welfare.

I am speaking of open-pit mining.

Mr. HOLDERER. How many men would you say are engaged in the industry today?

Mr. HOLMAN. My estimate is a little bit higher than some. In my contact with the industry as a whole, I would say that, directly or indirectly, approximately 2,000, because in the majority of instances, while your manpower may not be directly working the mine, I can tell you that the majority of the royalty owners are turning right around and investing their money in more properties. It is that stimulus of the possibility of a continued program that has caused the kind of investment that has been made.

Here I show $5 million has been invested in equipment and mills; 25 percent probably of the $10 million we have received has gone to taxes and I would say another quarter of a million has gone to royalties. That has not left much for the producer that started out in the business. That is what the records reflect. All the major producers show virtually that kind of story. We plow back more than received in anticipation of getting our money back.

Mr. REDWINE. This development would not continue without this type of legislation.

Mr. HOLMAN. No; it would die immediately.

Mr. REDWINE. That is all I have.

The CHAIRMAN. Thank you.

Mr. REDWINE. Mr. Dole, please.

Will you state your full name and your official position, Mr. Dole?

STATEMENT OF HOLLIS M. DOLE, DIRECTOR, OREGON STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES, PORTLAND, OREG.

Mr. DOLE. My name is Hollis M. Dole. I am the director of the State of Oregon Department of Geology and Mineral Industries.

Mr. REDWINE. Will you present your story as you desire.

Mr. DOLE. Thank you.

Before beginning I would like to read to you a telegram I received from my office:

> Re your telegram today I endorse the continuation of the present chrome program to 1961 as embodied in Senate bill 3504.
>
> ELMO SMITH, *Governor of Oregon.*

Gentlemen, I have five points that I have written out and I would like to read them:

It is my opinion that continuation of the chrome-purchase program as outlined in S. 3504, is essential to the people of the United States. In support of the bill I offer the following:

1. The Government must retain the confidence of its people.

So far the Government programs for chrome (World War I, II, and the Korean conflict) have been "crash" programs. When the chrome crisis passed, the programs were dropped and the miners who had received encouragement to produce were, in effect, summarily discharged. Investments, know-how, mine, and geological data was lost. This "We need you—get lost" philosophy is bound to take its toll on the confidence people have in their Government. It is my opinion the dismal failure of the quicksilver program is the result of this kind of a situation. The Oregon Department of Geology and Mineral Industries made plans for extensive exploration for mercury in Oregon in 1955 when the market price went up to $325 per flask and the Government underwrote a $225 floor for the industry. To date April 1956) very little interest has been shown by the miners in prospecting for this commodity in this State, and this in view of the fact that many prospects are known to exist. I charge this up to lack of confidence in the Government by the mercury industry. Don't let this philosophy spread.

2. Continuation of the present program is necessary until a long-range domestic minerals policy is adopted.

The President, in vetoing H. R. 6373 in 1955, asked for a long-range policy. The President's Cabinet Committee also recommended a long-range policy. The Western Governors Mining Advisory Council has recommended a long-range domestic minerals policy to their governors, 12 of which have gone on record as favoring the policy as proposed. The miners want a long-range policy. It is evident that such a policy much be formulated. Therefore, the present program must continue, even though it is recognized it is stopgap legislation. Otherwise on adoption of the long-range policy the spadework

of the present program will be lost. This would mean a loss of money to the Government and to the mine operator, a loss of the chrome miner to other branches of industry, and a loss of mines due to lack of upkeep.

Senator BIBLE. May I interrupt you right there because you say something with which I am in thorough accord.

Do you have any idea when we are going to arrive at this long-range mining program?

Mr. DOLE. Senator, I certainly wish I did. The Western Governors Mining Advisory Council has recommended something to their governors, the governors, individually, as you know, have endorsed it. The industry and the governors seemed to have gotten together. I hope that Congress can bring forth a long-range minerals policy soon.

Senator BIBLE. No one hopes any more than I do.

I also want to comment that in the letter which was put in the record this morning, dated September 24 last year, it was indicated that those in the Interior charged with the duty of making a long-range mining program were working at it at that time. I am only hopeful that, between now and the time they testify next Wednesday or Thursday, they can come up with some answer that we can understand, answering the very point that you make.

Mr. DOLE. I certainly do, too. I hope they do.

Senator BIBLE. But living in hopes is not going to keep these mines alive.

You may proceed, Mr. Dole.

Mr. DOLE. Thank you.

3. Information on chromite occurrences and distribution must continue to be collected.

The increased demand of foreign countries for domestic ultilzation of their own natural resources makes it necessary the United States thoroughly and diligently pursue a continuing program for inventorying and developing the resources within its borders. As the result of the present program greater reserves of metallurgical grade chromite are known to exist in Oregon and California than ever before. The Oregon Department of Geology and Mineral Industries has been conducting a geological study of chromite occurrences in southwest Oregon for the past 3 years. Attached is a preliminary report on one small district that shows progress is being made and indicates that favorable zones and areas for the occurrence of chromite bodies can be delineated. This study is continuing within our department. But geological studies are not the whole answer to chromite reserves and occurrences. Mining must continue for mining produces tangible evidence that cannot be obtained from geological theories. The cost of the Government of continuing the program is much less than the returns received.

4. A nucleus of mining personnel must be retained.

Chromite mining, like other types of mining and branches of industry, is a specialized form of industry. Know-how is all important. Training of operators, miners, and allied persons takes time and considerable expense. The present program has created a nucleus of people familiar with the problems and methods of chrome mining. Continuation of the program would assure the Nation of a nucleus of specialists in this very important adjunct to the alloying industry that could expand if necessary.

5. Chrome mines must be kept open.

Chromite is found in serpentine and other ultrabasic rocks. Serpentine is very unstable and any openings cut in it must be constantly maintained, otherwise the workings are lost. Without assurance that the purchase program will be continued until a long-range program is established, chrome mining on the west coast will cease. This means the mines now open will be lost forever or exorbitantly expensive to reopen. Consequently the structures and zones opened during the present program will be lost to further exploration and possibly even ore known today and not extracted by the end of the program will be lost—in essence, destroyed.

The CHAIRMAN. The Government of this country has never carried out an extensive program of studying the mineral resources of the Nation to where we would look for supplies in case of war and so forth.

Mr. DOLE. Yes, they have carried on such a program. They have made investigations. A good part of southwestern Oregon has been mapped geologically.

The CHAIRMAN. By the Federal Government?

Mr. DOLE. The Federal Government, the United States Geological Survey and the United States Bureau of Mines have been in the area and they have done a certain amount of work.

The CHAIRMAN. Have they recommended any program for the encouragement and development of these minerals that are so necessary for the national defense?

Mr. DOLE. They issued reports. Now I suppose you could consider that the reports could be construed as being encouragement.

The CHAIRMAN. Of course, we have sent geologists around the world to study the resources that are available in other parts of the world for use in this country in case of need. Is that not true?

Mr. DOLE. That is right.

The CHAIRMAN. It seems to me that we should concentrate on undertaking to develop the resources we have at hand and try to develop a program whereby we would have the essential minerals for national defense, for American industry, right here at home.

Mr. DOLE. It would seem that way to me, Mr. Chairman, but even if I am with government myself, I don't believe that Government investigation of properties is the whole answer. I think that you must continue to encourage private enterprise.

The CHAIRMAN. Yes, of course.

Mr. DOLE. And they should have a program on how they could get in and develop ore themselves, because it is private enterprise on which we were founded, and that is what we want to develop.

The CHAIRMAN. Of course, some of these properties are of such a low-grade character that it would be impossible for private capital to go in there and undertake to develop them without some Government support.

Mr. DOLE. Without a long-range program, sir. If there was a long-range program where the miner could look forward to a 10-or a 15-year period in which his material would be purchased, then he could make large investments, conduct expensive surveys, and figure on amortization over such a period. The chrome programs as set up so far have only been for a few years; consequently, the miner

could look ahead a matter of 2 or 3 years at the most. Therefore, it has not encouraged the exploration of the large disseminated deposits.

The CHAIRMAN. Any other questions?

Senator BIBLE. Mr. Chairman, I think that this is a very fine statement, and although this does not have any bearing on the particular subject before you, as a matter of curiosity, how many geologists do you train in Oregon State? How many young men and young women are going into the mining world?

Mr. DOLE. At Oregon State College at Corvallis, there are about 60 people in geology with about 15 graduate students. At the University of Oregon, I can't tell you how many are enrolled in the University, but they are graduating about 20 advanced students this year with master's degrees.

Senator BIBLE. You said you were graduating 15?

Mr. DOLE. At Oregon State. I am not with Oregon State College. I am with the State of Oregon, Department of Geology and Minerals, which is separate from the university. I have no academic connection.

Senator BIBLE. I was interested in knowing how many young men and women were going into the further study of mining, trained geologists, and mining engineers.

The CHAIRMAN. Thank you for your very able statement. You have been very helpful to us.

Mr. REDWINE. Mr. Dole, in connection with your remarks about the long-range program, are you familiar with Senate Joint Resolution 148?

Mr. DOLE. Not under that number.

Mr. REDWINE. It is a resolution that was introduced on February 23 of this year by our chairman in behalf of himself, Mr. Anderson, Mr. Barrett, Mr. Bible, Mr. Goldwater, Mr. Hayden, Mr. Malone, Mr. Mansfield, and Mr. Scott.

Mr. CHAIRMAN. I think that it might be well for this to be read at this time, not just placed in the record but read. With your permission I will read it.

The CHAIRMAN. Very well.

Mr. REDWINE (reading):

JOINT RESOLUTION Expressing the sense of the Congress with respect to a sound national minerals policy, and directing the Secretary of the Interior to take certain notice in furtherance of such policy

Whereas the mineral industry of the United States is vital to the welfare of the Nation both in war and peace, ours being essentially a minerals and metals economy;

Whereas for the above and other reasons it is essential that the United States be as nearly self-sufficient as possible in both the minerals and metals commonly used as well as those classified by the Government as strategic and critical;

Whereas dependence upon foreign sources of supply for our minerals and metals needs, in this atomic age, would invite possible national suicide;

Whereas only by constant exploration, development, research and production can our minerals industry maintain its reserves and its supply position in a healthy condition;

Whereas although the Congress approves a sound mineral stockpile program as a defense measure, it feels that such a program must be supplemented by constant production, in both peace and wartime, to maintain a sound economy and realism in national defense;

Whereas economy should be practiced in Government wherever possible, too much attention is paid to procuring foreign strategic materials cheaply for the national stockpile whereas real economy frequently demands purchase from domestic sources at higher prices;

Whereas the Office of Defense Mobilization is concerned only with the war economy of the minerals industry, the Department of the Interior is or should be directly concerned with the peacetime economy of the minerals industry;

Whereas the Office of Defense Mobilization continually insists that, although it is interesting in developing as broad a mobilization base for war and peace as is possible, its Director is bound by the limits of the Defense Production Act and the current stockpile formula which he interprets as requiring him to get as much material as possible at the cheapest possible price regardless of source;

Whereas the Congress is not assured that the current stockpile formula is in the best interests of the Nation;

Whereas, as the Office of Defense Mobilization concerns itself directly only with the national defense within the stockpile formula, the Department of the Interior should be concerned with the peacetime economy of the mining and minerals industry and with the distress of certain segments of such industry contributed to by the policies of the Office of Defense Mobilization, low tariffs, and cheap imports;

Whereas the Office of Defense Mobilization has ample legislative authority, backed by ample funds, to take care of the defense situation, the Department of the Interior has neither; and

Whereas the Office of Minerals Mobilization has been organized within the Department of the Interior with directions to submit to the Director of the Office of Defense Mobilization recommendations regarding mineral policies for defense, and to the Secretary of the Interior regarding peacetime mineral economies: Therefore be it

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior is authorized and directed to present to the Committees on Interior and Insular Affairs of the Senate and the House of Representatives (1) within six months after the adoption of this joint resolution, a plan for keeping the domestic mining industry in a healthy condition at all times, and (2) within six months after the adoption of this joint resolution, and every six months thereafter, a report advising the Congress of the current economic status of each of the domestic mineral industries of the United States.

SEC. 2. The Secretary of the Interior is further authorized and directed, within one year after the adoption of this joint resolution, to submit to the Congress his recommendations for legislation, to be administered by the Department of the Interior (including a suitable bill or bills to carry out such recommendations), which will assume the United States of a minerals industry, both of the common minerals and metals and those classified as strategic and critical, having the capacity to operate on a sound economic basis regardless of the price of foreign minerals and metals.

Mr. Chairman, you directed that that resolution be drawn due to the fact that last year the Department of the Interior and the Office of Defense Mobilization told the committees of Congress that by the time the first of 1956 came around they would have a long-range minerals policy. That policy has not yet come up and even the bills we are considering today have not been reported on except four of them and those reports were adverse.

The CHAIRMAN. That is correct.

Senator Malone, this is our Senate Joint Resolution 148, of which you were a cosponsor and in which you were very helpful in developing. I am sure that every statement in here is justified fully. It seems to me that the Government is very neglectful in not trying to come forward with a program that will help American mining industry.

Mr. REDWINE. Do the sentiments expressed there coincide with your views?

Mr. DOLE. In the bill?

Mr. REDWINE. Yes.

Mr. DOLE. I would hesitate to make a statement one way or the other on it without studying it further. Please understand my position.

The CHAIRMAN. You can have a copy of it and take it home with you. It is only reciting the facts and requesting the Government to take action on the facts, that is all. Of course, it is important that you should see the exact statement. I am not asking for your opinion on it unless you are familiar with it.

Mr. DOLE. I am not familiar with the bill.

Senator MALONE. Mr. Chairman, all I would say about this resolution, which applies to every bill which has been introduced and which is now before this committee, is they are all directed to correct something which Congres itself has done. In other words, we went on a free-trade basis with everything. So we cannot possibly stay in the mining business against the low-cost labor in other nations, either in chromite in Oregon, tungsten in California, manganese in Montana, or anything else. So everything we are doing is makeshift until we can get our feet back on the ground. Everything you read there that I heard—I came in the middle of it and as you say I did lend my name to the resolution—is true. All could be corrected without very much trouble if we could get the administration off this 24-year free-trade proposition, but if you cannot do that then you have to have some guaranteed price one way or another. Whatever you use, it is something to try to correct, a problem we created ourselves. So I am for anything that will keep the boys working until we can realize what ought to be done.

I join with the chairman. You are in a very responsible position. I used to know all your departments up there. I join with the chairman and would appreciate it if you would study it and give us the benefit of your advice and counsel.

Mr. DOLE. I will.

The CHAIRMAN. We thank you for your statement. It will be very helpful to us.

You will have a copy of this resolution.

Mr. REDWINE. Mr. Fay Bristol, please.

Will you state your name?

STATEMENT OF FAY I. BRISTOL, PRESIDENT, OREGON MINING ASSOCIATION, GRANTS PASS, OREG.

Mr. BRISTOL. My name is Fay I. Bristol. I live in southern Oregon. I am president of the Oregon Mining Association. I am in the chrome-mining business as my regular operation. I do not have a prepared statement although I have three statements here which I will place in the record. They are from three smaller chrome operators, which will give you some idea of the problems.

The CHAIRMAN. They will be copied in the record at this point.

(The statements referred to follow:)

APRIL 11, 1956.

Mr. F. I. BRISTOL,
Rogue River, Oreg.

DEAR FAY: In order that you might have facts to present to the hearing in Washington, I am herewith setting forth my problems.

For the past 3 years I have been doing development work on 3 chrome mines. During that time I have kept 12 men steady on the payroll, that is until the snow and flood of December stopped all operation. My mines as a rule are year-round operations, but the weather this year stopped everything. In fact the weather, was probably a help because I ran out of money at the same time.

With development work and building of a concentrating mill, I have spent $42,000 over the past 3 years. During this time I brought about $12,000 worth of chrome concentrates—two loads—into the Grants Pass chrome depot.

With the above figures you can see it will take me at least 3 years of producing full time, before I make back the original investment, and begin to show a profit. In stating that it will take at least 3 years of producing to show a profit, I am going on the basis that the price of chrome will remain as now scheduled. If the price goes down it will be impossible to keep producing. If the price goes up, then I may have my original investment back within that 3-year period. Of course if the price goes down I will have to stop all operations, and if there is no extension of the chrome program, I will be just another of the many chrome miners standing in the long bread line.

I am, as you can plainly see, very much interested in seeing the chrome program extended. We should have at least a 5-year extension of the program. In order to continue producing I am going to have to have financial assistance, and in order to get this backing we have to have a definite program to go on.

As you know the names of my three mines are: Chrome Hill, Elk Camp, and Holliday mine. With the extension I figure I can ship over 5,000 tons of concentrates and lump ore a year.

Sincerely,

ED CARLSON.

GRANTS PASS, OREG., *April 11, 1956.*

Mr. F. I. BRISTOL,
Rogue River, Oreg.

DEAR SIR: Will you kindly present the following facts to the United States Senate Committee on Interior and Insular Affairs at the meeting of the committee April 19.

My associates and I have spent the past 3½ years without salary or wages, developing the Emma Bell mine in Siskiyou County, Calif., at a cost of over $32,000. This mine is estimated to contain 200,000 tons of chromite ore with a chromium 203 content of 18 to 20 percent, having a value of about $30 per ton when mined and treated. The concentrate from this ore assays 50 percent chromium 203 with an iron ratio of 2.5 to 1 chrome over iron.

During 1955 we installed a 50-ton capacity concentrating plant at the mine. But due to the forest fire and dry season we were unable to operate the plant or mine extensively before the winter weather stopped our progress.

With the proper extension of the present chrome program or another plan equally as good we can make this project pay off. But under present world market conditions we would be forced to close down and take our loss.

Respectfully yours,

S. B. LEWIS.

GRANTS PASS, OREG., *March 12, 1956.*

FAY I. BRISTOL,
Oregon Mining Association,
Rogue River, Oreg.

DEAR FAY: Thought you might be interested to know that our mill is operating, when the weather permits.

Three new properties on the high plateau have opened up, showing a very good quality of milling ore. The indicated tonnage seems very good. In fact it may be necessary for me to increase my capacity to take advantage of it.

Of course we are very interested in an extension of the chrome program. Like so many others in the chrome milling, these first few years of the program have been a period of learning how to mill profitably.

The consensus of opinion among the fellows I have spoken to: Bob McCaleb, Ralph Kaiser (at their mine and mill, in the Chetco county), Mr. Grissom, Ernest Foster (mining and milling on the Illinois), as well as the boys on our high pleateau district: James L. Perry, H. L. Miller, "Hap" Loyd, Larry Lee, Lou Lively—all feel that an extension of the program is a must. All of them would like to see price level maintained or, if not, to have it increased.

The profit margin is now much narrower than when the price was established in 1951.

If there is any other information that we can give, would be glad to supply it.

Yours very truly,

WALTER B. FREEMAN.

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Mr. BRISTOL. I thought I would give you an idea of the operating mines in chrome. The staff asked me how much money we had spent. I got to looking up the mines and I tried to figure out how they had all eaten because, actually, during the year 1955 there were 149 independent shippers to the stockpile. They received two and a half million dollars. You take 149 mines operating on $2½ million, there is not anybody getting very rich.

Since January 1 to April 1, 39 were able to ship.

Now, in our country—of course, we had a rather bad winter—most of the chrome operations are above snowline. In other words, three-quarters of them are. Quite a number of them this year, with good luck, will get in long before the Fourth of July. The heavy snows will start again in late November. When you are trying to develop mining properties with a 5-month operating period and your program runs 2 to 3 years at a time, it does not get much done. But what has been done has been truly amazing.

I noticed in talking with the former witnesses here, they were asked if reports were not written by the USGS and the Bureau of Mines. As to the reports written for the chrome mining area, Siskiyou County, the report came out and said it was possible some day in the far distant future, over the next hundred years, that there might be 2,000 tons of high grade chromite in Siskiyou County.

There have been several mines that have produced more than that already. Many, many of them have been opened up. One mine produced nearly 10,000 tons. And the Government report said it was completely worked out, absolutely hopeless, there was no sense doing anything with it.

Chrome mining did not appeal to anybody in the mining business. There was really nobody that had ever been in chrome mining that wanted to go back in particularly, with the exception of maybe 2 or 3 people. So our entire personnel, mine management, engineering, has been developed since this program started. They went and dug where people said there wasn't any and they found some. It has developed now to the point where I think some real production can be had.

The biggest problem in underground chrome mining is that if you leave it for 3 months you come back and you have a nice smooth hillside, it probably won't even show anything. Nice serpentine rock, nice and slick. Back of the rocks you have talcum powder on all sides. The open pits cave in. Loose serpentine just won't stand. So if this program was shut down for a year you might just as well forget about mining chrome on the Pacific coast.

When the President vetoed the extension last year, I personally called in my two partners. We had decided if this went through we would put in a nice little mill and we would get our money back out of it. We can't do it this summer. This particular mine you can't haul; you can operate all winter but you can't haul except the last of May. Maybe you would not get the chrome out that you did mill. So I called in my partners and said, "I am through." I talked them into it and we quit.

We did lease it to a small lessee.

The tough part of it is I have had to advance him money to keep him going, so I didn't get clear out of the deal.

As far as I was personally concerned, with the veto by the President, I quit because I could see no possible chance of getting the money out that I already had in.

Senator BIBLE. Mr. Bristol, at that point, is it generally true of chrome mining that the mines, as I understand it, in Oregon and California, are all above the snowline?

Mr. BRISTOL. No. Mr. Holman is operating in a territory where he is only shut down about 2 months out of the year.

Senator BIBLE. But in the general Oregon operations is it true that you have 5 months' operation a year?

Mr. BRISTOL. It will average about 7 months.

Senator BIBLE. You are saying if the program only goes to June 30, 1957, it does not do you too much good because this year is gone.

Mr. BRISTOL. The program ends this summer, as far as we are concerned.

Senator MALONE. Mr. Bristol, is it not true that chromite has a peculiar way of occuring, in sort of kidneys or spotted?

If you keep going, a chromite miner who knows something about mining chromite generally finds another deposit but there is no assurance that he will find one in the same place, but he generally does. It is a sort of kidney deposit.

Mr. BRISTOL. In talking it over with Hollis Dole, who testified before me, and various members of his staff, when the chrome operation started the theory was that there were isolated pods, you would find one accidentally, you might never find another one. The people that live with the chrome mine continue to find ore, they go ahead and develop them; as you live with the mine you learn where the chrome is. If you shut the mines down you have lost all that know-how. There are few people now that, you might say, were excellent chrome geologists, but most of them have had no geological training, they are just mining chrome. They are the actual operators of the property and the people that find chrome and can follow the leads and keep the mines operating.

Senator MALONE. There are some deposits where there are stringers that sort of lead from one to the other, but in general it just takes a sort of sixth sense to keep in business.

Mr. BRISTOL. That is true; it does.

Senator MALONE. But you do find it?

Mr. BRISTOL. Yes.

Senator MALONE. I wanted to ask for the record, it is true, is it not, that you are in business in the chrome mining under the 1953 Malone-Aspinall Act that was passed, and if there is a simple extension you are still in business and if there is not, you are are out of business?

Mr. BRISTOL. That is correct.

Senator MALONE. Now, you are from the sagebrush roots out there, I have known you a good many years as I know nearly all your associates and have been down in that country many times.

We have an argument here once in a while because people come out of a mining school somewhere in the east and without doing any mining get charge of our departments over here by some hocus pocus.

They say to you they are not interested in any mines unless there is a showing and a discovery and a reasonable prospect. Well, we say, "What is a reasonable prospect?" They say, "What a prudent man would think."

What I told them, both in the Senate committee and on the Senate floor, is that a prospector is not a prudent man, and thank goodness for that, because if he were, we would not have any metal in the country. He just digs where his sixth sense tells him to dig and where one man finds none another finds some, so the trick is to keep enough prospectors out there looking for it and you find it.

Mr. BRISTOL. That is very true. It is true in chrome. Actually with few exceptions of 1 or 2 people that did know something about chrome, most of the people came in. One fellow went out on the side of the hill and here was a tiny string of chrome and nobody in their right mind would consider it worthwhile. He reported it as an occurrence, almost a museum occurrence.

We kidded him a bit, because the prospector's dream is that he finds a little spot on the side of the hill, and he has a pyramid on the side of the mountain.

But, actually, after he operated a few more years he found more of them. You develop that with experience.

The State of Oregon has taken an entirely different view on it than the textbooks on chromite.

Senator MALONE. When there is a principle established by Congress so that you know with reasonable assurance that in 3, 4, 5, or 10 years they will have to change their principle again, or it would be a feasible operation if you found it, then that is what makes the prospectors and men like you finance prospectors to go out and look for it because of the assurance if you find it you get the money back, plus some profit.

Mr. BRISTOL. That is correct. Unless you believe in finding a pot of gold at the end of the rainbow, you are not in the mining business.

Senator MALONE. The mining business is a gamble to start with, is it not?

Mr. BRISTOL. Definitely.

Senator MALONE. Let me ask you then if you have a year-to-year or 5 years with no assurance of any bill or act to extend it, how far can you expend your money? Is it not a fact you can only spend the money that you know you can get back within the limit of that one bill plus profit, or you do not dare invest further money?

Mr. BRISTOL. That is true. I would say most of the people in the chromite business at the present time are going simply on faith and hope and staying with it just purely on faith, and hoping that the Congress or the executive department will do something about it. They are all out on a limb.

Senator MALONE. Whenever it is up to an executive department to issue an executive order, which are mostly given out by people who do not know anything about the mining business at all, to say nothing of chrome, it makes you a little nervous, does it not?

Mr. BRISTOL. Yes; a very mild statement of fact, yes.

Senator MALONE. Now, getting back to this principle, we have already destroyed the principle under which most of the mines in the country were discovered and that was the principle of taking the profit out of low-cost foreign labor at the water's edge so that all you had to do was compete with other Americans.

Now, unless you have a fixed price over a long enough period of years—that is a fixed price enough above the market price so that you can pay the difference in wages, taxes, and cost of doing business

over a long enough period of years while you had that duty or tariff to make up that difference—there is no mining business, is there?

Mr. BRISTOL. That is true.

In fact, thinking back over one of the State of California bulletins on chromite, they start off and say California supplied most of the chromite for the United States up until 1892 when the tariff was removed from chrome.

It goes on to say chrome mining then ceased in California.

Senator MALONE. Now, we have may bills here. I call them makeshift bills. My own bill in 1953 was a makeshift bill.

Now we have a situation—we had it last year—3 or 4 of us introduced bills to extend the Malone-Aspinall Act. It was vetoed. That bill did not extend the time which it should have, but it extended the amounts so that you knew up until 1958 you would be in business.

I do not think the President understood it. He has many troubles besides miners' troubles. He has men around him who think you want to buy it at the world price because the people are entitled to that lower price.

But, as you well know, and you have gone through it in chromite, Mr. Williston has gone through it in mercury; you have all watched it over the years, as soon as they put us out of business in chromite, in tungsten, or mercury, or any other critical material, then the price will go up to what the market will bear.

Mr. BRISTOL. That is very true.

Of course we have not produced enough chromite to worry the world producers for a long time, such as the tungsten people here and the mercury people. They put the cold shivers in the foreigners once in a while.

The CHAIRMAN. Senator, we are going to have some voting on the floor very soon.

Senator MALONE. I have one more question. I know this fellow so well. I do not want to overlook the chance to see what miners have been doing.

If you had a principle here so that you could pay these wages, whether it was a duty, adjustable, or whatever it was, or you had a 10-year guaranty of profitable price, how much chromite do you think after 4 or 5 or 6 years you would be producing in the United States?

Mr. BRISTOL. It would be up to 200,000 tons of high-grade per year.

Senator MALONE. That means that if you were shut off from any foreign source and you could put the heat on, you could probably double that production in a shorter period during an emergency?

Mr. BRISTOL. That is right.

Senator MALONE. Probably more?

Mr. BRISTOL. That is right.

The CHAIRMAN. Thank you very much. I think you have been very helpful to us.

Mr. BRISTOL. Thank you, Mr. Chairman.

The CHAIRMAN. The next witness will be Mr. Robertson of the Cyclone Gap mine.

STATEMENT OF WILLIAM S. ROBERTSON, CYCLONE GAP MINE, SISKIYOU COUNTY, CALIF.

Mr. ROBERTSON. I am William S. Robertson. I am a chrome operator.

The CHAIRMAN. What properties do you operate?

Mr. ROBERTSON. Cyclone Gap Mine.

The CHAIRMAN. Where is that?

Mr. ROBERTSON. In Siskiyou County, Calif.

The CHAIRMAN. Do you have a prepared statement?

Mr. ROBERTSON. No.

The CHAIRMAN. You may proceed to make your statement.

Mr. ROBERTSON. I operate two properties, Cyclone Gap, at a high elevation, where I am only able to work 5½ months a year.

The other one is on the Illinois River in Oregon, which I work the year round.

Mr. REDWINE. Did you have any specific comments you wanted to make on the bill, Mr. Robertson?

Mr. ROBERTSON. On the Cyclone Gap property, unless the time is extended, I would not have a chance to develop it any further in such a short time. The Robertson Chrome, we have enough ore developed there for the end of the program.

About the chrome in the smaller deposits, there may not be much afloat. I had that experience, there would be quite a space between ore bodies.

Senator MALONE. By floats you mean the rock that you find on the surface?

Mr. ROBERTSON. Some of the smaller ore bodies may be on a pinch, and they would not be very big to start with.

Senator MALONE. But you keep following them until they open up in a sort of kidney or pod?

Mr. ROBERTSON. I had some experience where it jumped nearly a hundred feet.

Senator MALONE. Are you in a tunnel when you are doing this or open cut?

Mr. ROBERTSON. About 800 feet under.

Senator MALONE. When you have to go a hundred feet with no sign of chromite it takes a little confidence or a little faith.

Mr. ROBERTSON. I say it does. We generally have a little to follow.

Senator MALONE. The way you talk, you look to me like one of the miners out there who keeps the industry going. I have always said this mining and prospecting is a disease. If you have it, you never recover, and if you do not have it, you never find anything.

Mr. ROBERTSON. Correct.

Another thing happens. During the first war they did go back in the hills and pack out which left very small traces, but it is pretty hard to figure ore bodies.

Senator MALONE. You heard the testimony of Mr. Bristol and the questions that we asked him. Do you generally agree that you have to have some assurance either on a principle or a guaranteed price over a number of years long enough so that you can afford to spend your time and money in the development of this ore, or will you just have to quit?

Mr. ROBERTSON. We will just have to quit if we don't get the extension.

Senator MALONE. You agree with Mr. Bristol's testimony in that regard?

Mr. ROBERTSON. Yes.

Senator MALONE. Mr. Chairman, I have no further questions. I want to say to you, while I have not met this man, you are looking at a miner.

Mr. REDWINE. You are the largest producer in the State of California.

Mr. ROBERTSON. Of lump ore.

Mr. REDWINE. What was your tonnage of lump ore last year?

M. ROBERTSON. I don't remember.

Mr. REDWINE. But you are the largest single producer in California?

Mr. ROBERTSON. Yes, nearly 10,000 tons out of the Cyclone Gap mine.

I have a letter from Hollis Dole, to one of my partners.

Mr. REDWINE. May we have that in the record, Mr. Chairman?

The CHAIRMAN. Yes.

(The letter referred to is as follows:)

STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES,
Portland, Oreg., December 8, 1955.

Mr. WILLIAM F. JOHNSON,
Johnson & Telfer, Grants Pass, Oreg.

DEAR MR. JOHNSON: This is in reply to your telephone request of December 7 in which you requested information on the following questions: (1) History of the chrome purchase program since 1951; (2) production of chrome from Oregon and California; (3) the chrome potential of Oregon and California; and (4) the significance of domestic chrome production to national safety.

1. History of the chrome purchase program since 1951

May 11, 1951: GSA announces plan to establish a purchase depot at Grants Pass.

June 11, 1951: GSA outlines a chrome buying program at a meeting in Grants Pass as follows: The program would be effective for a period not to exceed 5 years but might be terminated by the Government at any time subsequent to 2 years upon giving 1 year's notice; "contemplated" that at least during the first year, delivery from any one producer would not be accepted in excess of 2,000 tons.

August 3, 1951: Chrome purchase depot opens at Grants Pass.

August 31, 1951: GSA modifies original purchase plan as follows: The program would end June 30, 1955, or whenever 200,000 tons of ore and concentrates were received, whichever would occur first.

May 1952: DMPA announces the raising of the amount of chrome that the Government will buy from 2,000 to 5,000 tons per year from any one source.

August 7, 1953: President signs bill extending the chrome buying program until June 30, 1957.

As you can readily see, at no time could operators foresee a market beyond 3½ years. Also the 2,000-ton limitations and then the 5,000-ton limitation would discourage any attempt to develop large tonnages of milling ore that might require a large-scale plant.

2. Production of chrome from Oregon and California

During the 4-year period 1943 through 1946, Oregon and California produced 139,471 short tons. Since establishment of the chrome stockpile at Grants Pass in August 1951, 105,263 short tons of chrome have been delivered. This is through September 30, 1955.

3. Chrome potential of Oregon and California

It is my opinion that the chrome production potential of Oregon and California is large. Statistics show that by the barest of prospecting an average of

approximately 30,000 tons per year have been produced in two 4-year periods. I am sure this could be increased, possibly several times, if the domestic mining industry was given the proper incentive. My reason for believing this is:

1. The widespread distribution of chrome as shown by Department records. Since January 1951, 407 prospectors have submitted samples to this Department, the assays of which indicated shipping grade or milling ore. This Department has analyzed in this same period approximately 800 samples that fell in the metallurgical or milling grade classification. Samples have been received from 9 counties in Oregon; 15 mills of various capacity are scattered in the chrome producing areas.

2. Since 1952 this Department has been engaged in a study of the chrome deposits of southwestern Oregon. Information to date indicates that the chrome does occur in definite horizons in the ultrabasic rocks. The structures in the ultrabasic rocks are extremely complicated and are determined only after careful geological observations. However it is very encouraging to know that a pattern can be worked out in many instances and information can be obtained that could help in extending known ore-bearing horizons.

3. To date practically all of the chrome that has been produced in Oregon has come from shallowing workings. Very little investigation to depth has been done. The only mine where financing has been sufficiently adequate to allow fairly extensive exploration has indicated continuity to the chrome bodies found at the surface. This mine, the Oregon Chrome Mine, has found ore through a vertical distance of over 800 feet. I believe they have discovered six ore bodies but this number could be incorrect—it may be more. It seems reasonable to believe that similar discoveries could be made at other properties if assurance could be given to the operator that his exploratory investment could be returned. This, of course, means a long-range program.

Because of short-term buying programs nothing but the barest prospecting and surface gouging-out of ore has been done. In most instances this has meant searching for deposits capable of producing lump ore and ignoring the disseminated bodies. Under a long-range program there would be encouragement to open up the disseminated deposits which are capable of supplying and amortizing large mills. To the best of my knowledge prospecting for large disseminated bodies has never been undertaken in southwestern Oregon. It is my opinion that it would be feasible under a long-range plan to undertake an extensive exploration program because the chrome spinel found in southwestern Oregon is generally high-grade. Also the widespread distribution of the chrome deposits would indicate to me a good possibility of finding the large disseminated type deposits. I am enclosing for your information a copy of our April 1951 ORE.-BIN which shows distribution of chrome deposits in southwestern Oregon. If we were to add to this map the many deposits that have been uncovered since that time, the map would be even more impressive.

I cannot speak for the potential of California as authoritatively as I do for Oregon but past experience shows California's production to be 3 to 5 times Oregon's. Therefore one could properly infer that California's potential is as great if not greater than Oregon's.

4. Significance of domestic chrome production

Only two States in the Union, Oregon and California, produce metallurgical grade lump chromite, a vitally necessary ferroalloy for national defense. Reserves of metallurgical grade lump and milling ore in Oregon and California are greater now than at any time previously and constitute an important emergency supply. With a definite long-range plan reserves might become many times the present amount. Almost as important as the development of known ore reserves has been the preservation of a nucleus of experienced chromite miners and operators. As a direct result, numerous access roads to deposits have been built by private funds. At the beginning of the current stockpile program there were no efficient concentration plants in operation Today there are 15 mills running in Orgon which, after a considerable amount of experimentation, are capable of milling 187,500 tons of ore annually.

I recognize that Oregon and California cannot compete with foreign countries in supplying chrome. As you undoubtedly realize, this is due in large part to the low wages paid foreign workers and, in many instances, to the assistance the United States Government has given these countries in opening up their mines. The deposits that occur in Oregon and California have no advantage over the foreign countries in ease of discovery and development. Nevertheless in times when foreign supplies are cut off, it becomes essential that this area supply the

bulk of the Nation's need. It would seem to me that it would be good insurance to the Nation for the maintaining of a healthy domestic chrome mining industry in Oregon and California.

I hope I have been able to answer your questions and that you will find the information of interest.

Sincerely yours,

HOLLIS M. DOLE, *Director.*

Senator MALONE. I suppose the rule applies if he wants to enlarge on his testimony in a day or two and send it to the committee, we will be glad to have it?

The CHAIRMAN. Yes.

Thank you very much.

The next witness is Mr. Janssen.

Will you state the name and corporation you are interested in?

STATEMENT OF CLAYTON R. JANSSEN, GENERAL PARTNER, CASTELLA MINING & MILLING CO.

Mr. JANSSEN. My name is Clayton R. Janssen. I am general partner of Castella Mining & Milling Co. and have mined chromite in California in connection with myself and R. F. Helmke since 1942.

At one time we were the only producers of domestic chromite in the United States, which was not a great deal of production, being 400 tons. That was refractory ore.

Senator MALONE. What is the difference now between the refractory ore and the regular product?

Mr. JANSSEN. The refractory ore is used in furnaces. The grade does not have to be as high. The average refractory ore that we have been selling is between 38 and 40 percent, but the chrome-iron ratio than ran, goes all the way from 1.61 to 1.

Senator MALONE. If it is above 2.6 it is outside the refractory grade.

Mr. JANSSEN. Then it becomes metallurgical grade. Metallurgical grade as demanded by industry is about 48 percent CR_2O_3 and 3 to 1 ratio, ratio of chromium and iron. Naturally we are very much in favor of the continuation of the existing program.

Stage one is the continuation of the existing program. Stage 2 is the development of a long-range program which will give the chrome producers sufficient time, Government-support probably by moderate tariff and an inclusion of the sale of all three grades of chrome.

In that long-range period, metallurgical, refractory, and chemical grade.

Relative to stage 1, the program should be continued at the present time for these reasons:

First, there is still approximately $10 million available from the original money allocated to further the program and there would consequently be no further cost to the Government other than was originally contemplated.

Second, the chrome business had to be developed from nothing, practically no known reserves, no experienced personnel.

These other gentlemen have gone into that.

Senator MALONE. When there is no price for chromite, they quit mining. Then the price goes up, there is some guarantee for a few years and then you go into business again.

Mr. JANSSEN. Senator, if we quit mining chrome, we are through. Just to give you a specific example where these gentlemen have been telling you how tricky serpentine can be, we have in our particular property about as rough serpentine as you can find, that when we shoot on Friday, we have to timber it so we can leave it over the week end.

Senator MALONE. What you mean by being through is that you lose it, if the price justifies it you will go in and find it again some place?

Mr. JANSSEN. Actually that is true. Most of the deposits at the present time that are being worked are deposits that have been operated as far back as 1870, 1880.

Senator MALONE. There are 3 or 4 cycles of operations.

Mr. JANSSEN. That is right, but the cost of opening them has become so much greater that I am afraid this time we cannot do it because our labor situation costwise has grown.

Senator MALONE. Go ahead.

Mr. JANSSEN. Third, that it has been our experience over the last 5 years, particularly, that the only way to develop reserves in chromite is the actual working of the properties.

As an example of that, I can quote our experience over the period of years in the Megalia Mine in Butte, Calif.

When we first started operating and developing this mine, the United States Geological Survey gave us an estimate of approximately 200 tons. Since that time we have produced and sold slightly in excess of 15,000 tons of metallurgical and refractory grade chrome.

Since June of last year, we have spent about $43,000 in development. We have developed about 11,000 tons of metallurgical chrome as closely as you can say that you have chrome developed. It is impossible to block it out. That is metallurgical grade.

If we could sell this as refractory grade, our reserves would be approximately three times that much.

Our past sales prior to the start of the Government-support program has been wholly in the refractory grades. We find ourselves in the situation at the present time of taking the refractory grade, milling it, and bringing it up to metallurgical grade, meaning that it takes us 2 tons of ore to make 1 ton of assayable.

The average price of our concentrate has been $83 a ton. It takes us approximately 2 tons to produce a ton of concentrate so the price of our ore, what we receive for our ore back at the mine, is $41.50.

In 1945 our direct mining cost-average was $11.20 a ton; in 1952 it was $13.90 a ton; and in 1955 it was $18.45 a ton.

We believe we have proven that which the geologists told us was not altogether accurate, we have proven the chrome occurs at a depth and can be mined at a depth.

Mr. Robertson is mining it at 800 feet. We are mining it at 350 feet.

If the program ceases support we would be out of business and the reserve we now have would no longer be reserves because the cost of opening the properties would be prohibitive.

This is pretty true particularly in the type of the nature of the ground you are working. You asked a minute ago relative to the old properties. I think the only significant new discovery that has been made in the chrome picture in California and Oregon other than

properties that were already known, were made by Mr. Holman. Mr. Holman has developed a very large property that can be worked by open-pit methods.

However, Mr. Holman is going to be in the same situation as the rest of us are, eventually he will be underground with its resulting high cost.

Senator MALONE. Even if it is not underground, can you compete with the low-cost labor countries?

Mr. JANSSEN. No, sir; we cannot.

Senator MALONE. That is the point here, that you have to have either a guaranteed price that makes up for that difference in the foreign cost with their cheap labor and cheap taxes, or you have to have a principle laid down that the tariff makes up for this.

Mr. JANSSEN. I think there is no question about that, particularly if it is underground it does not lend itself to mechanization; therefore, more labor.

Where we are paying men in 1952, $1.50 to $1.75 an hour, we are paying them $2.50 to $2.75 and the biggest bulk of the cost in your chrome mines is in labor.

Senator MALONE. What do the foreign producers pay where your competition is?

Mr. JANSSEN. Fifty cents to $2 a day.

Senator MALONE. Not an hour?

Mr. JANSSEN. Not an hour. That is quite a difference.

Developments over the last 5 years in which the chrome support program has been in existence does not give you a sufficient time to work a worthwhile chrome deposit. The worthwhile deposits in the future are going to be the low-grade deposits which will produce a high-grade concentrate.

Senator MALONE. What do you call a low-grade and high-grade? What is the differentiation in percentage?

Mr. JANSSEN. Insofar as Grants Pass is concerned, the rejection point is 42 percent.

Senator MALONE. You have to mill it up to 42 percent?

Mr. JANSSEN. Yes, sir.

Senator MALONE. What does it run as it comes out of the mine?

Mr. JANSSEN. It can go all the way down to 10 percent.

Our particular ore average is 32 percent. We can by the means of selective mining bring it up to 37 or 38 percent, which under a long-range program should be able to be sold as refractory ore, not at the same price as metallurgical but it is a little silly to mill a 37-, 38-percent ore if it is salable.

Senator MALONE. But you can go down to an average of 10-percent ore under certain conditions?

Mr. JANSSEN. We still have a property on which is a very large deposit of chromite in Trinity County where we developed about 140,000 tons of ore that ran between 18 and 20 percent, but regardless of what we did we could not bring the iron into satisfactory ratio and therefore could not operate the property.

We still have the property. Under a long-range program if chemical and refractory grade ores were Government supported, we would be back up on the top of the hill working this deposit.

Senator MALONE. I thought there was a process developed by the Rustless Iron & Steel Corp. of Baltimore where they could use the low-grade chromite directly into the furnace and the iron content was not much in question.

Mr. JANSSEN. We had Mr. Byrom, who was vice president of Rustless, work with us last summer trying to lick that problem.

As far as our ore was concerned, it was impossible. A long-range program must include the ability of the producer to have an output for the chemical and refractory grades, as well as the metallurgical grade.

The present Government chrome program by its limiting specification has precluded the possibility in our opinion of developing the real potential chromite reserves in the United States. Specification could be broadened to include the three grades, then a program of sufficient duration and support at today's cost would not only develop new reserves of metallurgical chrome, but keep the mines in operation which cannot exist solely on metallurgical grade.

In chrome mining you have a mine that will have a certain percentage of metallurgical grade, have a considerably greater percentage of refractory and chemical grade, and because of the fact that you have no market—there is a market, but you can't sell it, the price is too cheap as far as we are concerned—we can't work those properties because the big percentages of the chemical and refractory grade, but still there is a significant amount of metallurgical grade contained in those deposits.

Senator MALONE. I wonder, Mr. Chairman, if the witness would be willing to submit later if he does not have it here for the benefit of the record, because everyone does not understand as well as you do, Mr. Janssen, what this grade means, if you would simply outline the different grades, like the metallurgical, the chemical, refractory, and the various grades of metal and about the consumption of each in the country, in this Nation, and the amount that is mined relatively.

Mr. JANSSEN. Yes, sir.

Senator MALONE. With the cost.

Mr. JANSSEN. I will be very happy to.

Senator BIBLE. We will be happy to have you supply that for the record.

(The information referred to follows:)

The three classifications of chromite are: (1) metallurgical, (2) refractory, and (3) chemical.

1. Metallurgical

This grade involves the usage of ore as nearly as possible to the standard specifications which are 48 percent Cr_2O_3 with a ratio of chromium to iron of 3:1. Variations in grade and ratio below 48 percent 3:1 are permissible depending on the end use and the plant involved down to 35 percent Cr_2O_3 with 1.5:1 ratio. Great resistance is had from consumers below about 40 percent and 1.8:1 ratio. Theoretically, perfect material is 48 percent 3:1 and consequently, the perfect material is what all consumers claim they require. Actual usage, particularly in times of stress, can be at least as low as 35 percent Cr_2O_3 with a 1.5:1 ratio as was proved in a number of cases during World War II where blending of lower grades and ratios with higher grades and ratios brought about an entirely satisfactory metallurgical product. With this in mind and recognizing the actual shortage of true metallurgical grade chromite within the borders of the United States, it must be continually remembered that the lowest usable grade—whether by blending, upgrading, or otherwise—is of extreme importance in any time of stress.

2. Refractory

Refractories cover a wide field and the usage of chromite in their manufacture is consequently much more subject to wide variation in grades than metallurgical chromite. The perfect refractory grade chromite ranges from 30 to 40 percent Cr_2O_3 with an R_2O_3 component (primarily the combination of Cr_2O_3 and Al_2O_3) in the range of 60 percent. The ores of the Masinloc deposit on Luzon in the Philippine Islands, the several Cuban deposits, a few Transvaal and South African deposits, and the production of the Magalia mine in Butte County, Calif., are typical of the best refractory grade chromite deposits in the world. Variation in Cr_2O_3 upward are common for particular uses in chrome cements, mortars, brick, and various types and kinds of plastic and ground chrome refractories.

3. Chemical

Chemical grades of chromite have an even wider range than the refractories. Generally speaking, a perfect chemical grade chome ore is one having from 42 to 45 percent Cr_2O_3 and in which the iron content is of no great importance. Consequently, most chemical grades are those containing chromite in the range of 42 to 45 percent Cr_2O_3 and iron content ranging from 18 to 19 percent up to as high as 25 percent. Again, the various consumers require different grades of ore but, generally speaking, the above is satisfactory for most chemical requirements. Uses of chemical chromite are well known and cover the whole field from tanning and pigment industries to electroplating

Mr. JANSSEN. I will have that in over the weekend.

Senator BIBLE. The Senator's suggestion is well taken. I think it would be helpful to the committee.

Mr. JANSSEN. Fine.

You see, we are coming into this situation on the Pacific coast. Obviously we have sold refractory ore for a number of years; that is growing. We are getting a ferrochrome industry out there which is going to increase.

Senator MALONE. What grade of ferrochrome do you turn out there?

Mr. JANSSEN. I will supply that later for the record.

Now, I could continue saying pretty much what I have been saying before.

Senator BIBLE. It may be understood that your written statement will be reproduced in full.

Mr. JANSSEN. Yes.

The thing I would like to emphasize before I am through is I am very definitely in favor of the continuation of the program at the present time. When Senator Murray read his bill which I was not familiar with, very obviously that is right down our alley; we are very much in favor of it.

I do want to emphasize the point that if we can have a long-range program that will take into effect, into consideration, the sale of all of the types of ore involved, I don't know that we can get 200,000 tons of metallurgical grade in my opinion, but I will say this: we will get well over 200,000 tons of metallurgical, chemical and refractory ore.

Senator BIBLE. Thank you very much for your statement, Mr. Janssen.

Senator MALONE. Where you put the amount we might reach if we had a 10-year price so that you knew you could come out in the clear on your investment and make a little money, or on the principle that the difference in wages and cost of doing business were automatically made up?

Mr. JANSSEN. I believe we could develop an industry on the west coast that would go between two hundred and two hundred and fifty thousand tons of chromite a year.

Senator MALONE. Then if you could keep your 10-year period ahead of you, your reserves, if you continued in an emergency you could probably increase it.

Mr. JANSSEN. No question about that. This is the only way you are going to prove reserves, you can't do it by drilling. The average chrome occurs in pods, it occurs in the serpentine area, you know it will be in that area. From my experience you figure if you are 50 percent right, you are right.

But you will pick up those pods and kidneys in that area by continual working on the project.

Senator MALONE. Now, geologists have said for many years that we have no chromite; we have practically no tungsten, no manganese in the country; therefore we must buy from foreign countries.

As a matter of fact, I do not know whether you have ever seen the report that the committee issued, Senate Report 1627. I think you have. We think we can make the Western Hemisphere self-sufficient and greatly increase our own production here in all of the critical materials if the conditions are set up under which a man can spend his money and have a reasonable expectancy of getting it back over a long enough period.

Mr. JANSSEN. That is right.

Senator MALONE. You were producing probably during World War II?

Mr. JANSSEN. Yes.

Senator MALONE. We produced all the tungsten we needed, and mercury and we greatly increased the chromite production.

But when these people say there is only so much chrome and only so much tungsten, let us save it for sometime in the future, where do you get saving underground ore?

Mr. JANSSEN. You don't get any place saving it, and you don't know how much you have.

The point on that is that we must in our own opinion be convinced that there is a very, very large tonnage of chromite in California, all the way up through Oregon and part of Washington that can be developed.

There is one point that has not been touched on here, there is a very large deposit of chromite in the beach sands running from Crescent City north to Canada, which are being concentrated at the present time by the Coquille division of the Pacific Northwest Alloys Co., making a concentrate 42 to 45 percent at Cr_2O_3 a 1.6 ratio.

Senator BIBLE. May I interrupt you to advise that the bells indicate we are getting very close to a vote on the floor of the Senate. I do not want to preclude your testimony or cut you off. In order that we may be able to vote we are going to have to leave now. I am hopeful that we may be back by 3:30.

I would like an indication of anyone that is here that must testify today and cannot be here tomorrow. Do we have anyone of that kind, Mr. Redwine.

Mr. REDWINE. I know of no one.

Senator BIBLE. If that is true, when we finish our business on the floor of the Senate, we will be back in session at 3:30 p. m., following this recess.

(The written statement of Mr. Janssen is as follows:)

STATEMENT OF CLAYTON R. JANSSEN, CASTELLA MINING & MILLING CO.

My name is Clayton R. Janssen. I am general partner of Castella Mining & Milling Co. We mine chrome in California and as partners with R. F. Helmke have been continuously mining chromite since 1942. In 1950 Mr. Helmke and I were the only producers of domestic chromite in the United States.

We feel that the chrome program is logically divided into two parts:

Part I is the continuation of the existing program.

Part II is a long-range program which will give the chrome producers sufficient time to properly develop their mines and justify the necessary large capital investments. It will mean Government support to allow us to compete with foreign labor. The program should be broadened to allow us to sell refractory and chemical grade chrome, as well as metallurgical.

PART I

There is still approximately $10 million available from the original money allocated to the chrome program. Consequently there would be no further cost to the Government other than what was originally contemplated.

Secondly, if the program ceases we will lose our experienced personnel; we will lose the known reserves that we have as long as we continue to operate. We will lose any change to develop a domestic chrome market. It must be remembered that the only way chromite reserves are developed is by the actual working of the properties. As an example, I can quote you our experience over a period of years in the Magnalia mine in Butte, Calif. When we first started operating and developing this mine, the United States Geological Survey gave us an estimate of approximately 200 tons of chromite. I do not mean to be critical of the United States Geological Survey. This 200 tons was all that could be seen or expected on the basis of their chromite experience in California and Oregon at that time. Since that time we have produced and sold slightly in excess of 15,000 tons. In our opinion, we have developed at the present time approximately 11,000 tons. You must understand that it is impossible in chromite to block out ore and that experience is the only yardstick by which you can measure your reserves. Our past sales, prior to the start of the Government support program, were wholly in refractory grade ores. We find ourselves in a situation at Magnalia where we are mining excellent refractory grade ore and because we cannot sell it to the Government or compete in the domestic market with foreign producers we have to mill it up to metallurgical grade. It takes us approximately 2 tons of ore to produce 1 ton of concentrate. It means that the average price of our concentrate has been $83 a ton. The price we are receiving for our Magnalia ore is therefore one-half of that, or approximately $41.50. The comparison of costs over the period of time we have been operating is as follows: In 1945 our direct mining cost was $11.20 per ton; in 1952, at the inception of the chrome support program, it was $13.95 per ton; in 1955 it was $18.45 a ton. These are direct mining costs and do not include transportation, royalties, or administration costs.

We, along with other producers mining underground, have proven that chrome occurs at depth. To quote two examples: Mr. Robertson is mining at approximately 800 feet at the present time. We are mining at slightly in excess of 350 feet. If this program were to cease and Government support were to stop, we would be out of business and the reserves that we now have would no longer be reserves because the cost of reopening properties is prohibitive. This is true of all mines, and it is particularly true of chrome mines, due to the nature of the ground in which chrome occurs. It must also be emphasized that practically all of the production of California and Oregon, except that of Mr. Holman, has been from properties that were worked prior to the inception of the chrome purchase program. These properties were reopened and significant reserves developed, where practically none was thought to exist. The cost situation as it exists today would make it impossible to spend the necessary money to reopen them if they were shut down for even a short perior of time. There are, of course, certain properties that are being worked on an open-pit basis, such as Mr. Holman's property and the Castro deposits. It is only a question of time before these open-pit mines will have to operate underground, with the resulting high costs.

The developments of the past 5 years in which the chrome support program has been in existence have in effect not been for 5 years because the original program had so many restrictions that it could only be considered a 2-year

program and then the extension of a 3-year program. This is not sufficient time to develop chrome properties, with the large necessary capital investment, and allow them to become effective.

PART II

It is necessary to have a strong continuing domestic chrome program which must be of sufficient duration to allow for the proper development of the properties and to allow for the justification of large capital investment. It must broaden its specifications so that the producer will have an outlet for chemical and refractory grades, as well as metallurgical grade. The present chrome program by its limiting specifications has precluded the posibility of developing the real potential chromite reserves in the United States. The specifications must be broadened to include the three grades. This would not only develop new reserves of metallurgical grade ore but keep mines in operation which cannot exist solely on metallurgical grade. Mines capable of producing the three grades will logically produce more metallurgical grade than if they were expected to operate only on the metallurgical grade fraction of the production. There are many properties which cannot operate on their small metallurgical grade fraction, but with the inclusion of the ability to market chemical and refractory grades would be in operation today.

Examples of this type of property are Pilliken deposits, Crow Creek deposits, large deposits in San Luis Obispo County, such deposits as Swede Basin and Chrome Ridge in Josephine and Curry County in Oregon. All of these properties have important tonnages if the ore grades included could be sold and there is a large fraction of these well within the metallurgical bracket. It must be also mentioned that the large production of the property at Mouat, Mont., would be salable at Grant's Pass, Oreg., under existing specification. It is proof that industry can absorb a large tonnage that does not meet metallurgical standards but which can be converted to metallurgical use. In addition to the properties mentioned, there are well-known areas that have unknown but important tonnages which, if a broad enough program permitted, at prices consistent with current costs, would unquestionably contribute greatly to our reserves.

Examples of this type of property are Red Mountain in Mendocino County area, the Del Norte County in California areas, particularly such of those in French Hill and Rattle Snake, as well as those in low and high divides. One area containing genuinely important tonnage of both metallurgical and chemical grade is that explored by Helmke, Thomas & Janssen in Trinity County, where trenching, stripping and drilling prove the existence of an extremely large quantity of disseminated material from which only sufficient metallurgical grade could be produced under the present Government specifications to carry part of the cost. There are other areas in both Trinity and Siskiyou Counties of importance and are well known through the publications of the United States Geological Survey and the United States Bureau of Mines. Perhaps the largest source of chromite in the United States is embodied in the beaches along the Pacific Ocean, where black sands have been deposited by rivers intersecting chromite deposits further inland.

The World War II operation at Coquille, Oreg., where chrome bearing concentrates were stockpiled by Metals Reserve Company, is evidence of what can be accomplished. The operations of the Coquille division of Pacific Northwest Alloys at Coquille, where chromite is presently being magnetically separated from the World War II stockpile to a grade that ranges from 42 to 45 percent Cr_2O_3 and having about 1:6 to 1 chrome to iron ratio in the form of clean concentrates. These concentrates are presently being shipped to the Pacific Northwest Alloys plant at Meade, Wash., where they are blended with foreign concentrates and ores and are being made into an extremely important satisfactory ferrochrome. This is being used by a number of the large stainless steel manufacturers throughout the United States. This company has drilled and blocked at least 150,000 tons with an additional indicated reserve of 150,000 tons and their overall holdings from Crescent City north to Canada have literally not been scratched. The present use of the concentrates proves the future use of similar concentrates under an expanded program.

Trade information on the part of producers, marketers, consumers is subject to the restrictions imposed by competition. Nevertheless, it is somewhat more than generally known that under certain circumstances most consumers can use by adaptation of their processes, as well as by blending ores, adding controlling raw materials, and otherwise manipulating chromite down to 35 percent Cr_2O_3 and 1.5-to-1 ratio of grade to produce acceptable metallurgical products. The

important in time of stress, when sealanes are closed and imports curtailed to a wartime economy, to the United States cannot be overemphasized. Development of total usable metallurgical reserves should therefore be of prime necessity in the defense of the United States. The operation of mines which will produce chemical and refractory ore to help carry the costs that the metallurgical grade fraction alone cannot do will produce metallurgical grade reserves far in excess of anything that has been indicated to date.

We suggest a basis which would be satisfactory to both the operator and the Government. The price paid for metallurgical grade ores shall remain as it now exists in the Grant's Pass stockpile, refractory grade and chemical grade ores would be approximately twice those listed in the April 12, 1956, issue of the E and MJ Metal and Mineral Markets. Refractory grades show a current price f. o. b. cars $32 to $40 per ton. Chemical grades are listed in the above publication at prices ranging from $31 to $32. The suggested price of double that of foreign ore would no doubt make the operation of mines containing the three grades economically feasible. It would be further suggested that the Government permit sales to be made direct to consumers under Government supervision and subject to funds being allocated from those presently available, or to be made available, in the future covering difference between the price paid by the consumer and the price suggested under this formula.

During the past 5 years it has been proved that estimates of available tonnage cannot be delineated or made available on short notice under a program limiting purchases to metallurgical grades as such. It is suggested that an overall program embodying metallurgical, refractory and chemical grades be considered. Under wide permissible specifications and prices consistent with today's costs, reserves of vital importance will be developed from presently operating mines and the reactivation of important well-known inoperable deposits, as well as from areas which under a broad program would justify the necessary exploration and development to delineate their potential.

Senator BIBLE. I think at the time we recessed at 3 o'clock, until 3:30, Mr. Janssen was about to complete his testimony.

Mr. JANSSEN. Senator, I haven't a great deal more to say except fundamentally, as far as the chrome business is concerned, in the overall picture we are greatly in accord with the resolution presented by Senator Murray—that is, to have a continuing chrome business, rather than an emergency chrome business.

The other point I would like to bring up is our particular company did not pay an income tax last year because we had a $52,000 loss, but we have about 35 men that did. I would like to, on the data you asked for, Senator Malone, include a little more on that, rather than to take any more of your time.

Senator BIBLE. That may be understood.

Senator DWORSHAK. What have you been receiving for your chromite you have been selling the Government?

Mr. JANSSEN. We have been producing wholly mill ore. Our concentrate price at Grant's Pass has been $83. Our concentration ratio is 2 to 1, so we are getting $41.50 at the mine.

Senator DWORSHAK. What is the comparable world price?

Mr. JANSSEN. Metallurgical grade is selling in New York roughly between $52 to $53. The Grant's Pass price for the same grade would be $110.

Senator DWORSHAK. Have you been actually getting $110 from the Government for your ore?

Mr. JANSSEN. We have not, but it is possible on the same grade that is being imported; that is, what is being received. But that is a slightly false position because the average overall that has been received at Grants' Pass is in the neighborhood of $96.

Taking our own personal problem, which is a comparatively good grade of ore, roughly 32 to 35 percent Cr_2O_3 which we have to mill, we have to mill it to bring it up to metallurgical grade, we are receiving back at the mine approximately $41.50, and if we were to try to sell it in the open market we would be getting around $27 or $28.

Senator DWORSHAK. There is a great demand for chrome now?

Mr. JANSSEN. There is a large demand for chrome. On the west coast the demand particularly is going to pick up.

Senator MALONE. What is the overall consumption in the United States of all grades of chrome?

Mr. JANSSEN. In round figures, I would say about a million and a half tons, of which about 60 percent is metallurgical grade, about 30 percent is refractory, and 10 percent chemical grade.

Senator MALONE. You will explain the difference in your statement?

Mr. JANSSEN. Yes, sir, I shall.

Senator BIBLE. Thank you very much, Mr. Janssen.

Mr. JANSSEN. Thank you.

Senator BIBLE. Will you call the next witness, please?

Mr. REDWINE. Mr. Segerstrom, please.

Senator BIBLE. We are happy to welcome you to this hearing, Mr. Segerstrom. He is an outstanding mine operator in the State of Nevada.

STATEMENT OF CHARLES H. SEGERSTROM, JR., NEVADA-MASSACHUSETTS CO., SONORA, CALIF.

Mr. SEGERSTROM. Mr. Chairman, I do not have any prepared written statement.

Mr. REDWINE. For the record, this is Charles H. Segerstrom, Jr., president of the Nevada-Massachusetts Co., operating at Tungsten, Nev.

Senator BIBLE. You are directing your attention to the tungsten bill, or any particular bill, Mr. Segerstrom?

Mr. SEGERSTROM. I am directing my attention to the overall tungsten picture. I thought at the end we could discuss the bill.

Senator BIBLE. That is agreeable. You may proceed.

Mr. SEGERSTROM. The company that I am associated with is probably the oldest continuous tungsten mining company in the United States: that is, continuous not without intermissions due to shutdowns and other causes through the years, but we have been in operation now 32 years. We are facing again what we faced the last time in 1949, and prior to that in 1937 and 1939, a complete elimination and shutdown of our domestic tungsten mining industry.

It is estimated that by June 1 of this year the 3 million units now authorized for the GSA to purchase will have been acquired. That is 2 years prior to June 30, 1958, to which the original program was extended.

Senator BIBLE. What month did you say we would reach that, Mr. Segerstrom?

Mr. SEGERSTROM. My estimate is around June 1 of this year, 25 months ahead of schedule. In other words, I think the domestic tungsten industry has done probably too good a job. I can remember

back in 1950, at the time that the Korean crisis first arose, a meeting here in Washington when this program was set up.

Some of the leading geologists and economists said that the United States was in no position to produce 3 million units of tungsten in X years, even in the period set forth in the bills.

However, last year the United States produced 987,000 units of tungsten. That is one whale of a lot of tungsten, and again goes to show that if the incentives are right and the manpower is available, and given a break, domestic industry can produce. However, like a lot of the other mining industries that we have heard talked about here today, the big problem is that of ups and downs.

Now, anyone receiving the statistics on tungsten will see that it is an up-and-down industry. It may flourish in a wartime period, then go completely out of business after a war, or in a readjustment period, then have to be revived again when there is new hostility, then be allowed to go out again.

Now, since World War I began in 1914, we have had four of those periods. One was not due to a war, but due to the depression of 1932 to 1935. However, we had to keep in mind that after the completion of World War II there was only one tungsten mine operating in the United States in 1949.

The others were forced to close down. The domestic price was forced down by foreign imports to the point where the foreign material was selling for $18 a unit c. i. f. New York, duty paid. At that time, there was only one producer in the United States that was financially able to remain in business by continuing in production and borrowing money on that production to enable him to keep his property in operation.

We did not follow that procedure. We shut down. Gentlemen, the thing that worries me more than anything, above all, is the matter of shutdowns. In the mining industry, as you gentlemen know, it is different than a manufacturing industry. It is not a push-button proposition but the biggest percentage of the people in the country and a lot of people of high standing have an idea that you can today push a button and close down a mine; and perhaps 5 years later when you have needs for its production, you push the button and start up again.

I do not believe there was ever more misleading thought than that. Once a mine is shut down it fills with water, timbers rot and deterioration goes on continuously. You heard the gentleman before me mention those conditions in chrome mining.

In tungsten it is no different. It is the same in any underground mine except that in some it is more severe than in others, and in chrome it is one of the worst. The difficulty has been that ore that is developed and opened up and that could be taken out and recovered from mines may never be recovered because of the shutting down of those mines.

It may mean a cavein of a section of those properties that will never produce any ore. In our case, we are operating at a depth of 2,000 feet, which is the greatest depth of operation of any tungsten mine in the world. If we shut down, we have thousands of tons of our highest grade ore that will never be recovered from that deep mine.

Senator BIBLE. Where is that particular deep mine?

Mr. SEGERSTROM. That is at Tungsten, Nev., known as the old Mill City property. That ore would never be recovered because we are pumping there several thousand gallons of water per minute, and at that depth the timbers are more apt to rot and the expense of keeping a property like that in a position to reopen is an expense that is greater than we can bear.

Now, this domestic tungsten mining program, as I say, has been too successful because the fellows went out and they did a whale of a job. At the same time, to my personal knowledge when we contracted for 3 million units of domestic production we also made large contracts for foreign production.

Now, those contracts for foreign production, no one, I suppose, was to know too much about them, but visiting miners from other countries have told me. I know of completions of some of them. They provided for at least twice the amount that was purchased domestically. In other words, more than 6 million units was purchased in foreign sources as against the 3 million from domestic sources.

Now, in connection with those contracts the thing that burns my blanket, if I might use a phrase like that, is that we are going out of business and a greater portion, or a million and a half units of that foreign production, have not yet been delivered, and have not been acquired as yet, and will not have to be delivered until the years 1957, 1958, and 1959.

Senator DWORSHAK. When were those contracts negotiated?

Mr. SEGERSTROM. Back in the days of the Korean emergency, in 1950 and 1951, but they were negotiated to extend over a period of 8 and 9 years, whereas the domestic producers were given only a 3-year program at that time, subject to the last extension.

I could tell a little story on that that I think is very significant. We had some tungsten miners from Australia visiting us here a few years ago and they said, "Charley, we would like to just see your contract that you have with the Federal Government for delivery of tungsten."

I said, "Well, we will be very happy to show you our contract." So I went into the safe and I got out a 2-cent postcard and showed them what our contract was.

He said, "Well, you know, I used to live here in the United States. I lived in Michigan, but I didn't realize that the people of the United States were getting let down so badly." He said, "Let me show you our contract." He dug out a contract that ran 10 or 12 pages, providing them with the price that was the equivalent of our price, less duty, to run for some 8 years, and will not terminate for another 3 years.

Senator BIBLE. May I ask a question there? These contracts that you mention that will not run out until 1957, 1958, and 1959, as I understand it, are for something in excess of a million units, and that is at what price?

Mr. SEGERSTROM. At an average price of around $55 a unit, or price of $63 less duty in the United States. There may be some variance in there, but from what I have been able to gather, it is around $55 a unit.

Senator BIBLE. That would be the average?

Mr. SEGERSTROM. That would be the average; yes, sir.

Senator MALONE. What would that net them in your opinion? $63 less duty would be $55, and there would be much more profit in there for their standard of living and wages than the $63 here for you.

Mr. SEGERSTROM. I was going to come to that next.

The average wage in this country is $2 an hour or more, whereas the highest average wage in foreign countries we are competing with is a maximum of $2 a day. In other words, it is at least 8 to 1. How can we compete on a basis like that with duty of only $8 per unit?

Senator MALONE. Do they have access to our machinery and know-how and mining?

Mr. SEGERSTROM. That is the next thing I was coming to. You seem to be reading my mind, Senator.

Senator MALONE. I come from the same country.

Mr. SEGERSTROM. That is right. That's one thing that has disturbed me even further. At the same time that these contracts were made with these foreign countries, there were arrangements made through ECA loans and other arrangements for equipment that is, I would say, even better technologically than is used in the average United States mine.

They are right up to snuff and are in a position where they have everything in the way of new equipment, access to new technological developments as far as milling is concerned, everything they have is of the latest design and they are using the latest know-how.

I know that time is running along, but let me say that in Korea, for example, and places like that where we have extended foreign aid we are now going to spend further funds to increase their productive capacity and to make their materials more competitive, as far as costs go, in the face of a serious situation at home.

In Korea, for example, they probably have one of the largest mines in the world with probably the lowest operating cost. There have been some articles on it and I have a friend who has written about it. The average worker at those mines gets a cup of rice a day for himself and his family, or per person involved, per unit. That is about the way they pay there.

Getting back to our own program here in the United States, one thing that we have done, and I think is going to be very helpful to defense industry—to the defense of the country and to the domestic tungesten mining industry is that the Tungsten Institute, of which my company is a member, and I am vice president, has instituted a big research program at Stanford Research Institute. You are going to hear more about that tomorrow.

The director of the program will be here and will go into detail about it. In new high-temperature use alone, where today we cannot go any further andn have greater efficiency, for example, out of our jet engines or intercontinental ballistic missiles, we are going to have to go more and more to high-temperature alloys.

High-temperature alloys are going to be based mainly on the use of tungsten. I don't say that because I am in the industry, but tungsten has the highest recrystalization temperature of any metal. That is the critical point, because it can be raised to a higher temperature and then recrystalized back in its original forms at a higher temperature than any other metal.

I don't except to columbium, tantalum, titanium, or anything on that point. Now, I was asked to give some figures here today that your staff members thought you would be interested in. I tried to

get up a little summary. It is a little bit difficult. It is like going out and attempting to take a census.

There are over 2,000 tungsten mines certified for this program in the United States. Now, of those that have produced and sold to the Government, that total is not known. However, I will say in the State of Nevada, in February of this year, just picking that 1 State, because that is the 1 I am most familiar, there were 44 mines operating and employing just a little over 1,000 direct employees.

Now, I have contacted 12 operator, 2 of whom are the largest, and going down through the medium sized to the smallest, to 1 operation where only 4 employees are involved, we get back to this fact: that the cost of production in the United States is a moot question which has been argued back and forth.

We had a meeting here of the Office of Minerals Mobilization committee on tungsten last December, and it was pretty well established that costs were an average in the United States of about $45 per unit. That is the direct cost. That did not include some of the other items that have to come into the picture like taxes, depreciation, and depletion.

Now in 1955, as I said earlier, 987,000 units were produced in the Unitetd States, and these figures that I put together represent 550,000 units of that 987,000 which is over 50 percent.

For example, let me give you some idea as to how that money was spent. There was $8,854,000 that was spent for direct cost of materials and supplies. There were $10,315,000 spent as direct cost of labor. Those properties had 1,943 employees. Those same properties paid in Federal taxes $3,125,000, roughly. Those same properties paid in State taxes, which in several cases were the net proceeds of mines tax, which is the equivalent of an income tax in the State of Nevada, some $470,000. Other taxes, mainly county taxes, amounted to some $235,000.

Now, speaking of that 1 figure in Nevada alone, the 2 counties that I am most familiar with, Pershing and Humboldt, it might be interesting to know that one-quarter of their income to support both the schools and the general county government of those 2 counties comes from net proceeds of mines tax.

If the program is allowed to expire on June 30, those counties will have to go into the red to the extent of one-quarter of their 1956–57 budget.

Senator MALONE. I suppose they will come for more Federal money for schools.

Mr. SEGERSTROM. I don't see how they can avoid it.

Another figure that will be of interest is that Federal, State, and other taxes paid by the owners, officers, and employees of those same companies amount to another $2,334,000. Now, those figures are not conclusive, because they do not include depreciation, overhead, amortization, insurance, and other costs, but those were the ones that the committee was interested in and so is the industry.

We want to show that that money is being used and being circulated to support the economy of the areas that are immediately involved. You have areas that are involved by tungsten, you have areas involved by chromium, manganese, and these other commodities. In tungsten it is going to hurt some particular areas very, very much.

We estimate altogether that there probably are 10,000 people, of whom, say, 4,000 are employees, the balance dependents, that would lose their entire income if the completion of the program is allowed to transpire, and nothing is brought along to carry it any further.

Senator BIBLE. Is that the figure in the entire United States?

Mr. SEGERSTROM. That is in the entire United States.

Senator BIBLE. What States actually produce tungsten?

Mr. SEGERSTROM. No. 1 is California; No. 2 is Nevada; also Utah, Montana, Colorado, Arizona, New Mexico, Idaho, Washington, North Carolina. I think that about covers them. There are about 11 States that are involved.

Senator MALONE. We have sort of developed over a number of years here an idea that you wanted to keep in production to add to our stockpile for national defense, utterly ignoring the economies of the area that produce the material, just the same as corn in Iowa or wheat in Kansas.

There are two points to this thing. First, of course, you can put it on a national defense basis, but you can overcome that with a stockpile. The advisability of that is something else. A going concern's production annually, plus the stockpile, has to equal what you are going to need for any estimated emergency. That is national defense.

But to get back to the economy of the country, there are large areas, North Carolina being one, and there are many others, that have different minerals, in a lot of the Western States where the whole economy of certain areas is wrapped up in mining. Is that true?

Mr. SEGERSTROM. That is true. It is not only the economy that is involved in mining, Senator Malone, but there is also involved the future of the defense effort of the United States.

If those mines are allowed to deteriorate to the point where they can never be brought back in production—for example, suppose it takes 2 years to put a mine back in operation. Now, 2 years is too short a period after a long shutdown. With the developments that we now have in the various types of munitions and implements of war nobody is going to sit around and wait 2 years to get another unit of tungsten developed from a property out in the West somewhere. We must have it above ground, and not below ground.

There are a lot of people that have the idea that we ought to maintain our natural resources underground and have them there where we know where we can get them. I think that theory is absurd with our present ideas of what the future warfare is going to be, because if we don't have them available and ready at the time they are needed, we will never have time to get to them.

Senator MALONE. As a matter of fact, isn't it a fact that the only way you can keep your reserves developed ahead of your mining is to have a profitable industry? In other words, you either have to have a principle laid down and use your duty to make up the difference in the standard and wages abroad and taxes and so forth here in this country, or you have to have a guaranteed price over a long enough term of years to develop reserves and be able to get your money back during that period and make a profit, or there is no mining?

Mr. SEGERSTROM. Well, we are getting back there, Senator, to what we had hoped would be forthcoming from the President's veto message of H. R. 6373 last year.

We were going to have some long-term objectives set up that would give the mining industry some idea as to what they could plan in the way of development work; so that you could set up your capital expenditures and development work and could recover it in the time that was allowed for recovery.

Senator MALONE. For 24 years, now, we have had propaganda in this country that we do not have these metals. We had a Secretary of the Interior for 20 years who said there was no tungsten, no manganese, no chrome, none of this or that, at the same time trying to do away with the very thing that protected the industry, that is, the duty or guaranteed price that made up that difference.

When they were able to do that, then you didn't have it; their prediction came true. So my point is, let us stay with national defense for the moment, which I don't believe is the most important thing because, as they say downtown, you can build a stockpile long enough for several years use, and the next war will not last several years; no one thinks it will.

But if you don't have a going concern industry in mining so that you can step it up because you have reserves, then you are up against it in 2 or 3 years with a large additional expense beyond any reasonable proportion to start the mining, even though the delay is 2 or 3 years.

Mr. SEGERSTROM. And you have no guarantee that you are going to have it when you do spend that money.

Senator MALONE. When you do have that principle established, or do have a bill 5 or 10 years, so that you know it is a profitable operation, or at least it has a chance to be—it is still a gamble—you do keep your 2, 3, 4 years reserves ahead.

Mr. SEGERSTROM. That is correct.

Senator MALONE. The only way you can do that and be sure about it is to have a continuous, going concern operation. Isn't that correct?

Mr. SEGERSTROM. That is correct.

Senator MALONE. Now, let us get back to national defense. I think it is one of the greatest fallacies in the world to say in order to keep in production of any material in this country you have to show it is necessary for national defense.

What I believe, and one of the reasons I wanted to stay in the United States Senate, is that you are entitled to be in businnss in anything in this country with the protection that equals the difference in the wage and living standard and taxes and cost of doing business in our country and the chief competing nation on each product.

If you have to go over that, that is another step. Can you, in your opinion, stay in the tungsten business if you have that protection over a long term of years that merely makes up the difference in the yages and the taxes and the cost of doing business in this country and in the chief competitive country?

Mr. SEGERSTROM. No, Senator. I think you were out at Sacramento at the Western Governors Minerals Conference. Out there it was decided that the present duty is one-third of what it should be and that it would have to be kept on a flexible basis.

Senator MALONE. You did not understand my question. My question is, if that is a flexible duty and it does represent that difference continually, and you know that is the principle laid down by Congress, you would be in business, would you not?

Mr. SEGERSTROM. That is right.

Senator MALONE. I know that the present duty does not represent anything. They might as well take it all off. It may be one-third or it may be one-half, but there is no principle attached to it.

Now, we worked on a principle for nearly a century and a half in this country and built a great standard of living. We have abandoned the principle. Now, we are arguing about make shift legislation. We have 5 or 6 bills. I think I joined in all of them. I think the junior senator from Nevada joined in all of them, just hoping that we will get legislation enough to keep the boys in business and keep eating regularly until we can get back.

Mr. SEGERSTROM. That is correct. I feel that all the legislation that has been proposed is constructive and I know that all the Senators that have proposed it have had the best interest of the domestic mining industry at heart, but it has to be on a makeshift or temporary basis because we don't know what the long-term programs are going to be. There has been no determination or no response to that.

Senator MALONE. I am going to ask that the resolution passed and recommended to the Governors on mining on the general principle be inserted in the record at this point.

Senator BIBLE. It will be placed in the record at this point.

(The resolution referred to follows:)

PROPOSED DECLARATION OF MINERALS POLICY

The Arizona delegation to the Western Governors Mining Advisory Council introduced the following resolution at the November 9, 1955, meeting in Sacramento. Since it was beyond the authority of the Western Governors Mining Advisory Council to approve such a resolution, the council referred the resolution to the Western Governors Conference presumably to be held in Reno in early 1956 with the council's unanimous recommendation that the governors give this resolution favorable consideration.

Whereas the mineral industry of the United States is vital to the welfare of the Nation both in war and peace, ours being essentially a minerals and metals economy; and

Whereas for the above and other reasons it is essential that the United States be as nearly self-sufficient as possible in both the minerals and metals commonly used as well as those classified by the Government as strategic and critical, and

Whereas dependence upon foreign sources of supply for our minerals and metals need, in this atomic age, would invite possible national suicide; and

Whereas only by constant exploration, development, research, and production can our minerals industry maintain its reserves and its supply position in a healthy condition: Therefore be it

Resolved, That the Western Governors Conference ask the Congress of the United States to declare a national minerals policy recognizing the aforementioned basic facts, and implement its declaration of policy with appropriate legislation to make our Nation self-sufficient insofar as possible in respect to our tremendous minerals and metals requirements.

Mr. SEGERSTROM. I think I am practically through, Senator Bible. I think that the whole situation is down to the point that we have 4 or 5 weeks to make a decision if we want a domestic mining industry as far as tungsten is concerned, and I want to make this statement now: That a survey of practically all the tungsten operators in the United States, and I know pretty nearly all of them personally, I would say that within 60 days you are not going to have any operation at all.

The foreign price today, delivered, plus duty, is roughly $41.50 cost, insurance, and freight, New York, duty paid.

Senator BIBLE. May I ask a question right there? I understand you to say within 60 days, unless the program is continued, you will have practically no tungsten mining whatever. Have any tungsten mines closed now?

Mr. SEGERSTROM. Yes, sir.

Senator BIBLE. As of this date?

Mr. SEGERSTROM. Yes, sir; there have been a considerable number that have already closed; one of the largest ones closed is the Riley Mine of Union Carbide. They closed a week ago last Saturday, and laid off some 90 men at that time.

That is going on in different operations all over the country. I heard of 1 this morning that laid off some 60 men. As the time grows closer, there is no use keeping your underground development work ahead of your milling, because you have nothing on which to plan and you do not want to leave that money invested in broken ore in the ground rather than money in the bank.

That is the principle they are all going on. The smaller the operation, I would say, the quicker they are closing down.

Senator MALONE. I had a telephone call from Hawthorne. They closed a mine in Mina, and I think they said 55 men were laid off. They just had a big meeting and are going to start a third party. They said both of these parties had gone off the deep end on free trade, so they are going to start one of their own parties.

You are in business now by virtue of this 1953 act, the Malone-Aspinall Act.

Mr. SEGERSTROM. Definitely.

Senator MALONE. We are trying to have a simple extension of it, and that is what you are talking about. Unless you get some special legislation for tungsten alone.

Mr. SEGERSTROM. That is correct.

Senator MALONE. In other words, you would not have been in business at all under the principle on which we are now operating.

Mr. SEGERSTROM. If we were dependent on the foreign price plus duty, we would not be in business today.

Senator MALONE. Except for that act you would not be in business in the first place.

Mr. SEGERSTROM. In the last 2 or 3 years.

Senator MALONE. You would not have been in business since 1953.

Mr. SEGERSTROM. That is correct.

Senator MALONE. During the war, of course, the price goes up and if you can get in business, like you of your organization, and if you don't lose it in the meantime, you can start up again, but the prospectors leave the hills on these metals in a certain length of time if it is not profitable after they find it, do they not?

Mr. SEGERSTROM. That is one thing that I think has been mentioned by several people, but I think should be mentioned again, the loss of professional personnel.

Now, I call a hard-rock miner a man of professional standards. The hard-rock miner is getting scarcer and scarcer as the years go along, and no young men want to go into that field, even with the improvements in equipment and everything else that has gone along with it. It is very difficult.

You are short of scientists. We all know that. You are just as short of mining geologists as you are of any other type of scientists.

You are short of metallurgists, assayers. You shut down these operations; you break up the personnel of that operation. You will never get those same people back again. You could not get them back if you wanted to, because they go off into new fields.

You are at a complete loss if you try to open again.

That personnel problem is one of the problems that very few people recognize, but it is becoming more and more real every day. I think I have taken enough time.

Senator DWORSHAK. What is the differential now between the world price of tungsten and the price that the Government has been paying?

Mr. SEGERSTROM. The Government has been paying $63 a unit. The world price today is between $41 and $41.50, duty paid f. o. b. New York, with the $7.93-a-unit duty already added in. It is already included in that figure.

Senator DWORSHAK. $41.50?

Mr. SEGERSTROM. Yes, sir.

Senator DWORSHAK. On that basis, it would be impossible for your company to operate profitably and compete with this world price.

Mr. SEGERSTROM. That is right. If you look back through the figures, and I know you have so many things to do you probably would not have a chance to do it, but I might take a minute to say if you go back through the figures you will find when the domestic industry shuts down, what happens is that the foreign price always decreases to the point where the foreign producer is certain that the domestic producer is completely exterminated before he starts increasing his price again.

Senator DWORSHAK. What percentage of tungsten can be produced in this country to meet our total consumption requirements?

Mr. SEGERSTROM. Last year, 1955, we consumed roughly 8,900,000 pounds. We produced in this country some 16 million pounds. In other words, we overproduced last year by two-thirds, and the year of 1955 was a year of large consumption.

As a matter of fact, it was the largest consumption year since World War II.

Senator DWORSHAK. Do think we can continue at this rate of overproduction for a number of years under peacetime conditions?

Mr. SEGERSTROM. I don't think that the deposits of the United States could take a beating of a million units a year forever. However, I think that with some conservatism in it, the production could be brought down more in line with the actual consumption and that we could be independent of foreign production for a considerable number of years.

Senator DWORSHAK. How do you think that could be accomplished?

Mr. SEGERSTROM. That is a $64 question, Senator. Certainly the difficulty there is real. I might mention another figure that the United States last year imported 20 million pounds of tungsten. Of course, part of that was the foreign purchases going to the stockpile, and we don't have any breakdown of that figure as to how much that was.

Senator DWORSHAK. Are private consumers of tungsten in this country buying their tungsten abroad or from our own producers?

Mr. SEGERSTROM. To my knowledge and I checked at length, in the year 1955 there was not one consumer in the United States that used domestic production. It all went into the stockpile and domestic

consumers bought all the foreign material they could buy at the low cost. I went around to the customers that we had prior to the program and I said, "We want to do business with you folks. We don't want to be dependent on the Government forever."

Senator DWORSHAK. If you tell this committee how to do it, we will appreciate your advice.

Mr. SEGERSTROM. Our former customers say: "O. K., if you can meet the foreign price with the same specifications for the material, we will be very happy to buy yours."

Senator DWORSHAK. You can't operate on that basis.

Mr. SEGERSTROM. No, sir.

Senator DWORSHAK. Because of higher operating costs?

Mr. SEGERSTROM. Yes.

Senator DWORSHAK. What are we going to do about it?

Mr. SEGERSTROM. We are either going to have to have some type of plan like this purchase plan that we have been under to assure that the industry is going to continue——

Senator DWORSHAK. Yes, but on that basis the Government purchases will go into a stockpile. How would you divert domestic consumption into the private industrial use?

Mr. SEGERSTROM. That is the $64 question again. I have thought of that for 9 months now.

Senator DWORSHAK. If you have not the answer, you would not expect us to have it, would you?

Mr. SEGERSTROM. No, sir. I don't have it. I wish I did. But that is the real problem. Of course, we have a variety of bills that we hope contain the answer to that, but I don't think any of them, with all due credit to everyone that has sponsored all of that legislation—I don't think the effect of those foreign imports has been taken into great enough consideration in that overall picture.

Senator DWORSHAK. If we ignore that aspect of this problem, then we will never get the real solution of it, will we?

Mr. SEGERSTROM. No, sir.

Senator MALONE. Article 1, section 8, of the Constitution sets up a duty to take care of that. That would take care of it, would it not, flexible duty?

Mr. SEGERSTROM. If it was flexible, but it is fixed. As a matter of fact, there is talk right now—there were hearings 2 months ago—of cutting the present duty.

Senator DWORSHAK. You recall a few years ago when we had this proposed tariff problem, protection for industry, before the Senate, that the very distinguished senior Senator from Nevada and I cast the only two votes for protection.

So when you talk about doing something in a practical way, let us be realistic and realize that two votes won't accomplish anything in the United States Senate.

Senator MALONE. We got 15 last time.

Senator DWORSHAK. That won't do the job either.

Senator BIBLE. Mr. Chairman, I want to be counted along with this distinguished company, because I voted the same way as you did.

Senator MALONE. I will say from what we hear in the textile industry now and several other industries, we may get more help next year.

Senator DWORSHAK. I just raise that. It may be extraneous, but I think it points up the difficulty of trying to reach a solution so that we can expect the production of tungsten in this country to meet the requirements of industry and until we can accomplish that, it will be most difficult to stabilize the production of tungsten in this country. Is that right?

Mr. SEGERSTROM. That has always been the difficulty, Senator. We have never come up yet with what you would call a long-term answer to that problem.

Senator DWORSHAK. Isn't it also true that about the only time our domestic mining industry is prosperous is during wartime or some comparable emergency?

Mr. SEGERSTROM. That is right.

Senator MALONE. Then there is a definite solution to it and we have had it for 150 years, and the 1930 tariff act provided for a flexible tariff. If the Tariff Commission, an agent of Congress, will get back to the Constitution in the regulation of foreign trade and they fix that on the basis of the difference in the wage, standard of living and cost doing business with the chief competing nation on each product, you are in business.

Then your Government, of course, will buy the production of whatever it is in this country, whether it is tungsten or something else, but you are in business.

Mr. SEGERSTROM. I am practical enough to realize, from what Senator Dworshak is talking about, what chance there is of passing that type of legislation.

Senator MALONE. We have a chance. When some of these other industries begin to suffer like you are suffering, it is not going to be very long. The textile industry is suffering right now, 19 cents an hour labor from Japan, and all these textile industries—there are 3 or 4 businesses now—are going to try to regulate that business of restrictions on quotas.

Senator BIBLE. Just following through on what Senator Dworshak so ably asked you, I am wondering if you would care to comment for the benefit of us who are trying to work out a problem short of this long-range program, which never seems to come down from those who say they are going to give us a long-range program, if you would care to comment on the three bills which are now before this committee.

You have one that you might say treats tungsten on a case-to-case basis. That is Senate 3379. You have Senate 2876, which is the straight-out extension for another 5 years, which is the Malone-Aspinall bill. Then you have Senate 3453, which, as you will know, is patterned after the Wool Purchase Act and the producers are paid a bonus equal to the difference between the market price and the price specified by the existing purchase program regulation.

I think your training and your background and your experience in tungsten might be helpful to this committee in arriving at the best bill.

Mr. SEGERSTROM. Thank you, Senator Bible. I told Mr. Redwine I would answer that before I got through. Now, S. 3453, the bonus bill, that has some merit, but I think that it brings back the same question that Senator Dworshak brought up—is it workable?

I think it is not workable in the case of tungsten where you have such an excess proportion of foreign imports as against domestic production. Now, suppose that bill in the case of tungsten were put into operation, with the same figures that I just quoted you for the year 1955.

Here I am a producer. My production cost, say, is $46 a unit. The foreign market, plus duty today, f. o. b. New York, is $41.50. To be eligible for that bonus, I have to go out and sell that tungsten to a domestic consumer in order to collect that bonus.

How am I going to do that and remain in business? That is the whole question in my mind. I don't think that applies to some of the other commodities in that bill, but in the specific case of tungsten, which is the only thing I know a lot about, I know it won't work because when you have overproduction from imports, you can't force that, except at a price, upon the domestic market.

I realize that a wonderful job has been done on that bill, but from that particular phase of it, I cannot see where it is workable.

Senator MALONE. Suppose either of these bills are all on the same general principle and that is a guaranteed price. It is now $63, and I have had some indication that it might not be quite that high. Suppose, for example, that S. 2876 is extended. Where would you fix the price of tungsten in your judgment, to be fair to the general producer and to be fair to the Government and taxpayers?

Mr. SEGERSTROM. I sat in on these various conferences in the last 6 months and it has been determined in fairness to the Government, the taxpayer and the mining industry, that a price of around $55 a unit would be a realistic price.

Senator Bible was there at the hearing in Sacramento. We held a 2-day hearing on it. It is not something that was picked out of the air. It was justified by the small prospector, the small-sized operator and large operators.

Senator BIBLE. For how long a period of time would that be continued?

Mr. SEGERSTROM. We asked in the Sacramento recommendations that it be continued for a 3-year period so that eventually the Government could get out of it and in the meantime our research could increase the consumption in the United States to the point where Government assistance would not be necessary.

Senator MALONE. Would you suggest a 3-year period instead of 5?

Mr. SEGERSTROM. I would suggest a 3-year period; yes, sir. I would compromise on a 3-year period.

Senator MALONE. We admire your experience in that particular field. It is very valuable.

Mr. SEGERSTROM. That is why I think that S. 3379 at $55, reduced from $63, might be the answer. I will tell you why.

I don't think in your omnibus bill that tungsten can be treated in the same manner that you can treat the other commodities. I think you are going to have to break the bill down for some of these commodities that have their own specific problems.

If you don't break them down and treat them specifically for the problems that exist in that particular industry, you can't do it in an omnibus type of bill that gives the same type of treatment, or attempts to, in simple language to the overall number of commodities involved.

Now, that is only my personal opinion. I do know something about some of the problems in the other metals and most of them differ from commodity to commodity.

Senator MALONE. Take the bill you are now operating under, S. 2876, is a simple extension of that bill. If a price were arrived at through much the same principle that you arrived at tungsten price on the other metals, and extended simply with a change in the price, would that be all right?

Mr. SEGERSTROM. Yes, but I think that if that was done, Senator Malone, you would have to go back and reappraise the other commodities in exactly the same way as we have been appraising this one.

It would take a lot of revision to change that bill so that it would meet all the individual conditions. I am saying in my own mind I would think that from the matter of simplicity it would be better to have individual bills for each of the individual commodities, rather than an omnibus bill to cover them all.

Therefore, you could treat manganese the way that manganese needs to be treated to justify the support it needs. Chrome could get its individual support.

In each one of those minerals there are different problems. I am sorry, gentlemen of the staff, but in my own humble opinion that is the way I would go after it.

Mr. REDWINE. Mr. Segerstrom, in that connection, isn't it true that tungsten, of all the metals that are in the omnibus bill, is the only one that we have overproduction on?

Mr. SEGERSTROM. That is right, overproduction, domestically and foreign, both. That is true.

Mr. REDWINE. And the objection you have, which the Senator has brought up, is the fact that it just would not work out on the bonus plan, that only applies to tungsten, does it not?

Mr. SEGERSTROM. I have not gone into a lot of detail and study on the others, but I think that is the only one at the present time where the bonus plan would not apply. I think you are perfectly correct there. It is so much out of line there——

Mr. REDWINE. I believe after the omnibus bill was introduced that the first single bill, just treating with one, was the tungsten bill and that was the reason it was introduced. It was to take care of that situation.

Mr. SEGERSTROM. That is right. It may be that the omnibus bill can treat the others all in one. It might only take two bills to cover all the commodities concerned.

As I say, it was just my opinion that for simplicity it would be better to break them down individually.

Senator MALONE. This is exactly what we wanted you to give us.

Mr. SEGERSTROM. Well, S. 2876, I would say, with some amendments, could probably cover it.

Senator DWORSHAK. Do you have any suggestion for reducing the production of tungsten in this country so that it would be more in line with normal consumption requirements?

Mr. SEGERSTROM. Yes, Senator. The college work I did was in economics. I have always worked on one theory, that it is price alone. That is why we came up with the $55 price. I think it is much simpler to reduce the production by just cutting the price than it is to say

"OK, we are going to have X number of pounds" and then complicating the situation with the two factors of price and a quota.

By simply reducing the price, it can be done. By that means alone. That is one reason the $55 price was arrived at.

Senator DWORSHAK. You said we produced 16 million pounds of tungsten.

Mr. SEGERSTROM. That is right.

Senator DWORSHAK. What percentage of that was diverted to and used by industry in this country?

Mr. SEGERSTROM. None that we know of.

Senator DWORSHAK. I thought that was the case, but I wanted to be sure that I had understood it correctly.

Mr. SEGERSTROM. Yes, sir.

Senator BIBLE. May I ask one further question, Mr. Chairman?

As I understand your position, you feel that the 3-year extension is justified?

Mr. SEGERSTROM. I do.

Senator BIBLE. That a $55 price is justified?

Mr. SEGERSTROM. Yes, sir.

Senator BIBLE. Now, is it my understanding that that would also carry with it not more than a 3 million unit figure?

Mr. SEGERSTROM. That figure I think could probably be reduced because at our Sacramento meeting it was taken into account that there are many small producers—and from these figures that I assembled we found one small producer whose costs in 1955 were $104 a unit. How he stayed in business is more than I can understand.

I think, Senator, the point you are getting at is that a $55 price would probably reduce the production a sufficient percentage of the total production from, say, the million-unit figure of 1955 down to, say, 750,000 or 800,000 units the first year, but with the rising cost of labor and materials in the second year the squeeze would be more and you would to have a smaller percentage, and the third year would have a still smaller number of units produced.

Senator MALONE. Another thing if you did extend it 3 years that would mean 5 from now, if we extended the one bill.

Mr. SEGERSTROM. That may be very true. The only difficulty there is that your funds have about run out for the present three million units. I am talking about three years from June of this year, not five years from June of this year.

Senator BIBLE. I still am not clear on one question that I am groping for. That is: What would be your best estimate as to the amount of units you would produce, $55 per unit, starting June 1, 1956, over a period of 3 years?

Mr. SEGERSTROM. I was taking that in the form of a graph. The first year that might be reduced to 800,000 units.

In the second year that would probably be cut down to at least 700,000 units due to the increase in cost.

And the third year that might go as low as 600,000 units.

Senator BIBLE. So you feel that something in the neighborhood of 2 million units might be gotten out in 3 years?

Mr. SEGERSTROM. This is only my own personal opinion, but it would be a squeeze with something in effect like that.

Senator BIBLE. You feel that it is a stepdown operation?

Mr. SEGERSTROM. That is right. It will come automatically.

Senator BIBLE. Price will control?

Mr. SEGERSTROM. The price will control it. I think it can be simply expressed that way and it will take care of the production and also cut down the amount of funds that would be necessary to accomplish it.

Senator DWORSHAK. Without a sizable reduction in the production of tungsten, what do you think the Government could logically do with its accumulation? What should it do with it?

Mr. SEGERSTROM. I think they ought to hold on to it. I don't think there is anything more valuable probably in our stockpile than the tungsten that is there, particularly with the new fields that we are coming into, not only in commercial use but in military uses, for high-temperature alloys in jet engines and ballistic missiles. Tungsten is just coming into its own. I say that with all sincerity.

Senator DWORSHAK. Then consumption in this country will probably increase materially?

Mr. SEGERSTROM. Yes, sir; that is what we are betting on when I come down to 3 years. We are betting that the research that we are sponsoring at the present time is going to increase that consumption to where we can be in balance with the production.

Senator MALONE. There is one thing about it that is very noticeable—this is a different tune than we have been singing for 15 or 20 years, that we have no tungsten in the United States—now we fix a price about equal to the world's price considering the difference in wages and taxes and we are overproducing. At least we have blown up the theory that we do not have tungsten in the United States of America.

Mr. SEGERSTROM. That is right.

Senator DWORSHAK Apparently you do not agree with the Paley report that we are a have-not nation

Senator MALONE. I destroyed the Paley report.

Mr. SEGERSTROM. I wish you gentlemen could have sat in on the industry committee meeting held in 1950 when Mr. S. H. Williston was chairman. Even the economists of the Interior Department and everywhere else told us we were crazy, that you could not produce much tungsten in the United States.

I am a young fellow from out in the sticks; I don't know any better, so I made a statement it was just a matter of price. Nobody has ever complimented me on it as being correct except Sam Williston. He has always told me ever since, "If anybody ever made one statement in all the time I was in Washington that was correct, there was nothing more correct than the statement you made at that time."

Senator MALONE. Of course, you are correct, and the Paley report was directed in one direction. That was to buy foreign ore; we did not have any.

Mr. SEGERSTROM. That is right.

Mr. REDWINE. Mr. Segerstrom, getting back to S. 3453, suppose it became effective, the bonus plan, and the American production went on the world market, what would happen to the world price?

Mr. SEGERSTROM. The last time we had an experience like that was in 1948 and 1949. Mr. Holderer remembers that.

The foreign price went down to $10 or $12 a unit before duty.

Mr. REDWINE. Then you would compete with the foreign ore, then?

Mr. SEGERSTROM. We would absolutely have to compete with every pound.

Mr. REDWINE. You would compete with that and you would get a difference under the bonus plan between that low price and the present $63 price under the terms of this bill?

Mr. SEGERSTROM. That is right.

Mr. REDWINE. The taxpayer would be paying that difference?

Mr. SEGERSTROM. That is right.

Mr. REDWINE. On the other hand, the ultimate consumer would be getting a much lower price product; would they not?

Mr. SEGERSTROM. That is true, but at the same time you would have to keep in mind that the cost to the taxpayer and the Government of the United States in all reality, I think, would be cheaper on an extension of the program because there the Government would have the commodity available, whereas under the bonus plan the commodity goes to industry and the Government pays the differential or the bonus and they get nothing in receipt for it.

Mr. REDWINE. I am not arguing the point with you. I just wanted your views.

Mr. SEGERSTROM. I have checked that and have made some rough figures on it. I know dollars-and-cents wise that probably there has been a lot of figuring done and that it looks at the present time as though the cost would be less under the bonus plan, if we would not have a falling in the world market price.

That bill would be the cheapest bill in cost to the Federal Government.

But to accomplish it under the economic factors that we have to take into consideration, I think that the Government, in the particular commodity I am talking about, would be the loser. That has been my reaction to it.

Mr. REDWINE. One further question. How many mines approximately do you think would go out of business under the $55 per unit price?

Mr. SEGERSTROM. I can't state in exact numbers. It is on a percentage basis.

The CHAIRMAN. Would not some of them just curtail production?

Mr. SEGERSTROM. Some of them are in a position to curtail production, others are not. Others would either have to operate at 100 percent capacity, or not at all.

There are economic factors inherent in the mining industry that disclose that a cutback is almost as disastrous as shutting down.

For many of the small mines that is particularly true and some of the larger ones where they have milling facilities built on a unit basis, where they have a thousand-ton mill and they have three or five 200-ton units they might operate on one 200-ton unit, but in a smaller operation that is not possible.

Mr. REDWINE. It is the small operator that would be cut out?

Mr. SEGERSTROM. The high cost operator.

Mr. REDWINE. Which in most cases is the smaller?

Mr. SEGERSTROM. Yes, sir.

Senator MALONE. You think most of the small operators would get along all right on $55?

Mr. SEGERSTROM. I think a number of them could. They testified in Sacramento to the effect that they could.

Mr. REDWINE. Mr. Segerstrom, under the bonus plan if the price dropped down, would some foreign mines go out of business, under that plan, and stabilize a higher world price, or not?

Mr. SEGERSTROM. That is another $64 question. That is what you would suppose would happen, but ordinarily it does not happen.

In some of the foreign countries the mines have been nationalized. For example, in Korea the mines are owned by the Korean Government. In Bolivia the Bolivian Government owns them.

It all depends on their need for dollars and the need of the market for the commodity.

What has happened before, and I will go back again to the year 1949, what happened there was that it just kept going lower and lower until they could sell it. It did not seem to make any difference with them, there was not a drop off in the producing countries as you would expect.

Senator MALONE. Is it not a fact under this situation as you have explained it, they are holding it low enough so that the real consumers in the country who buy the foreign ore—they will take what that traffic will bear and they may be able to do it at $20 rather than $40, less the tariff.

Mr. SEGERSTROM. That is right.

Senator MALONE. Like mercury, we have seen it go from $350 to $375 a flask when the boys went out of business here. It went down to $50 a flask to put them out of business.

So the mistake that was made is that they are going to continue to get it at a certain price after you get out of the business.

That is not true. Then they will take what the traffic will bear. The customers are the ones that suffer in the long run because it cost so much more even than the domestic production cost, but they are out of business then.

Mr. SEGERSTROM. In the long run, that is the case.

Senator MALONE. That is the history.

The CHAIRMAN. Well, we have discussed this question leisurely and I think it has been very helpful to us. We are in no rush here.

Mr. SEGERSTROM. I feel that I have monopolized a lot of time.

The CHAIRMAN. I do not think you have. I think everything you have said has been beneficial to us.

Mr. SEGERSTROM. Thank you, sir.

The CHAIRMAN. I think the questions asked by the Senators have been very wise and proper. I do not think we have wasted any time.

I think we have a record here that will be helpful to us when we come to work out legislation.

Thank you very much.

Mr. SEGERSTROM. Thank you, Mr. Chairman.

Mr. REDWINE. Mr. Sullivan, please.

STATEMENT OF RAY SULLIVAN, MINERALS ENGINEERING CO., GRAND JUNCTION, COLO.

The CHAIRMAN. Will you state your name and the concern you represent?

Mr. SULLIVAN. My name is Ray Sullivan. I am vice president of Minerals Engineering Co., and director of the Salt Lake Tungsten

Co., Grand Junction, Colo. We have operations in Montana, Utah, and Colorado. That is more or less the order of their importance.

Our mines and concentrators are located south of Butte in the Dillon area. We have an acid leach operating plant in Salt Lake City, which not only handles part of our Montana products, but those produced by many small operators in the intermountain area, mainly in eastern Nevada, all of Utah, the western part of Colorado.

In addition to those two installations, the Salt Lake Tungsten Co. was formed to chemically upgrade low grade concentrates produced in the intermountain area.

Our company owns half of it and the Sylvania Electric Products owns the other half.

While our company, Minerals Engineering, is comparatively new in the mining business, being about 8 years old, most of us who are connected as officers or directors have been in the mining business of tungsten for 20 years or more. Blair Burwell is president and I am vice president.

We have in Montana an operation of some 208 men.

In Salt Lake it is over 100 men.

While that is comparatively small as an industry, in the Dillon area it is considered by the people living in Beaverhead County as being the single largest payroll of that county.

I gave Mr. Holderer some figures as to taxes, total payrolls, other pertinent facts of this operation. You may be interested in some of those.

This one operation in Montana paid over $638,000 in taxes.

The CHAIRMAN. What is the name of that operation?

Mr. SULLIVAN. Minerals Engineering Co., at Dillon.

The CHAIRMAN. I thought you referred to something at Butte.

Mr. SULLIVAN. This is south of Butte, about 40 miles south.

To repeat myself, we paid about $638,000 in all taxes, including Federal, which was $361,000 of that figure.

The State and county of Beaver Head were recipients of around $160,000 worth of taxes.

Senator BIBLE. You are directing this to the year 1955?

Mr. SULLIVAN. To the year 1955; 1954 was a lower figure.

Senator BIBLE. Just so the record is clear on the point.

Mr. SULLIVAN. Yes.

Senator BIBLE. Pardon the interruption.

Mr. SULLIVAN. The interruption of this tax income to the local communities of that part of Montana we are told will be quite disastrous. For instance, metal mines taxes in Montana alone are $147,000 of that total.

Our payrolls in Montana, and I don't have comparable ones for Utah, last year, were $648,000.

Supplies were $625,000.

We happen to be one of the few tungsten producers in Montana that are of the open pit variety of mining. Because of this our costs are somewhat cheaper, are certainly cheaper, much cheaper, than any underground operation.

We, through our management, felt that the program as now coming to an end in the next 5 weeks, or thereabouts, will certainly definitely affect us. We could not operate under the present $41.50 price even though we have a very cheap operation.

The main reason for this is that our ores are of a class that contain impurities that have to be removed first before industry can consume it. The Salt Lake plants are suited for that purpose and were built for that purpose.

So that while we have a cheaper mining and milling cost, we have to add to that a chemical treatment cost. When you add both those costs together we are at or above $41.50.

We have just instituted a proceeding to start shutting our mines down. As of last Monday we reduced our mine force by one-half. This is to consume our stockpile of ore which is ahead of the mill so that by May 15 our mill will be down.

We figure we must shown down at least 2 weeks in advance to the last receiving date in the stockpile in order to prepare that material for delivery to the GSA.

In our case, today is the 19th of April, we have less than 4 weeks.

In some ways our particular operations are more or less fortunate. If we shut down and have to stay down 2 years or 3 years, our mines won't fill up with water. We will have a dispersal of important and technical personnel as mentioned by Mr. Segerstrom. That is really half of our problem because when those men are dispersed to other industries, when we have to start up again we have the choice of retraining new personnel.

Most of our men happen to be local in Montana; they are local in Salt Lake, and they will be consumed by the other industries, at least employed by them.

If we have to start up in 2 or 3 or 5 years hence, we figure we will almost have to do it with a green crew.

Senator BIBLE. Will your mill not suffer as well?

Mr. SULLIVAN. Certainly our mills will suffer. Plants staying idle naturally deteriorate. We consider that the least of our problems on the shutdown. We think the scattering of the know-how, the personnel that has been developed in our organization has by far the worst effect on us.

I have already mentioned the effect of the tax laws to the County of Beaverhead in the case of Montana. Salt Lake County won't feel it as bad. In Colorado, the areas we have there, they will feel it quite strongly.

If we shut down the chemical upgrading in Salt Lake which will follow by 2 weeks the shutdown in Montana, there will not be open to the average small miner of that part of the intermountain area west a place to sell his ore or his low-grade concentrates. Today we are receiving on the last count ores and concentrate from over 42 producers.

In Montana we are operating four mines. Two of them we just brought into being early last fall, north of Anaconda, entirely new deposits. They were shut down during the winter due to heavy snows.

The CHAIRMAN. Is that in the Pittsburg area?

Mr. SULLIVAN. Not that far north, just 12 miles north of Anaconda. The Montana field is a product of the Korean War. It was discovered, brought into being then. The mine was put into production in the last 6 years. It is one of the outstanding efforts on the part of DMPA.

Money was borrowed on the initial stages of exploration from the Government. Properties were put into production and the Government has been paid 100 cents on the dollar.

We believe the area has a great potential for future production, but when we are paying our average man $21 a day, our cost naturally is going to be in excess of $40. The going rate in that part of Montana—with incentive pay, may be $1 a day higher than some of them. We do that only to keep the good crews we have.

I think that is all I have to say.

Senator BIBLE. Mr. Chairman, I would like to ask Mr. Sullivan if he cares to comment on the three bills that are designed to attempt to help the particular industry in which you are interested.

The Case bill on tungsten which takes it as an individual case, the extention of the Malone-Aspinall bill and the bill that is patterned after the Wool Production Act. Do you have an comment to make on any of those?

Mr. SULLIVAN. Yes, I do. I heard Charlie Segerstrom talk. We have not had time to compare notes. I feel somewhat differently than Mr. Segerstrom does as to the results of each one of those bills. I think that the tungsten bill itself would be an easy answer, although I believe at the end of 3 years we will still be faced with the same problem we have today. You are acquainted by Mr. Segerstrom's testimony with the present overproduction. That certainly must be whipped by either production brought down to consumption, or consumption raised up to the production rate.

Mr. Segerstrom mentioned the research plan that the Tungsten Institute is now promoting, is now backing and paying for. That is the development of new uses of tungsten. This no doubt will have a very beneficial effect on the consumption rates in future months and years.

Today all our domestic production, or our domestic consumption is being supplied by foreigners.

Senator BIBLE. That was his testimony.

Mr. SULLIVAN. That is right.

Now, how are we going to get our share of the domestic program? We have to do it some way today. I believe from that viewpoint the omnibus bill will answer the long-term run.

Senator BIBLE. You mean the one that is patterned after the Wool Production Act?

Mr. REDWINE. The Bonus Act?

Mr. SULLIVAN. I know it means that you have to sell your product. That automatically means that we have to cut production in order to sell it. But we are going to have to do that sooner or later.

It may be a great load on the taxpayer in the first year or two on that bill in that the price of tungsten will certainly deteriorate down to the price mentioned by Mr. Segerstrom, $20 a unit duty paid. But at the same time we are spending money to increase consumption.

At the present rate if we increase consumption by new alloys, the foreign production will take it all up. So the money we are spending to increase the use of tungsten we are not going to get the benefit of.

The only way I see we can do it is to cut our production to some point as provided in that bill and sell it and we will get enough money out of that bill so that we can live on every unit that is sold.

Senator BIBLE. At what price can you live?

Mr. SULLIVAN. Fifty-five dollars.

Senator BIBLE. You agree on that?

Mr. SULLIVAN. I agree on that, but I believe you will see a rising curve of consumption if our present economy is maintained, of tungsten, and under this bill you will automatically use domestically produced tungsten which means that it cuts out the foreign production.

Now, a foreigner can't sell his production if he has no customer over here. Under that bill if it drops down to $20 a unit the domestic person still has a customer.

As we increase uses we can increase production and the price will rise.

I believe that 3 to 5 years from now we will see a higher price and we will be still supplying our own domestic consumers.

The CHAIRMAN. Thank you, Mr. Sullivan.

Senator MALONE. It does not matter how low, then, under this bill, the price of foreign producers would sell tungsten; it might be $10, you still retain your customer because you get the difference between the $55 and the $10?

Mr. SULLIVAN. Yes.

Senator MALONE. The thing that you cover, that many overlook, is the economy of the local areas where these mining industries have been located, has had spasmodically, over a long term of years, ups and downs, the communities are up and down with them; they are on relief or they are paying taxes.

Paying of taxes is a lot different than being on relief.

Mr. SULLIVAN. Yes.

Senator MALONE. Sometimes we forget that.

Mr. SULLIVAN. I certainly agree with you, Senator.

Senator MALONE. I think you have been a valuable witness.

Mr. SULLIVAN. Thank you.

The CHAIRMAN. That concludes your testimony, Mr. Sullivan?

Mr. SULLIVAN. Yes.

The CHAIRMAN. We are certainly thankful to you for the contribution you have made. This will conclude the hearing for today. We will resume tomorrow morning at 10 o'clock and hope to expedite the hearing tomorrow so that we will get through.

Mr. REDWINE. Mr. Chairman, the committee has received quite a few statements from industry people who were not able to appear. May the staff be authorized to insert at the proper place in the record the subject matter of that material?

The CHAIRMAN. That may be done.

(Whereupon, at 5 p. m., the committee was recessed, to reconvene at 10 a. m., Friday, April 20, 1956.)

EXTENSION OF PURCHASE PROGRAMS OF STRATEGIC AND CRITICAL MINERALS

FRIDAY, APRIL 20, 1956

UNITED STATES SENATE,
SUBCOMMITTEE ON MINERALS, MATERIALS, AND FUELS,
OF THE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D. C.

The subcommittee met, pursuant to recess, at 10 a. m., in room 224, Senate Office Building, Senator James E. Murray, of Montana (chairman of the full committee), presiding.

Present: Senator James E. Murray, Montana; Alan Bible, Nevada; George W. Malone, Nevada; Henry C. Dworshak, Idaho; and Frank A. Barrett, Wyoming.

Present also: William H. Coburn, committee counsel; Robert W. Redwine, assistant counsel; and George Holderer, committee engineer.

The CHAIRMAN. The hearing will come to order, please.

We have a long list of witnesses this morning. We hope to be able to conclude the hearings today.

I would suggest that anyone who has a prepared statement merely give a brief summary of it and the statement then will appear in the record in full.

We will have to do this in order to expedite the hearings and come to a conclusion here.

Next week we have to hear the Government officials and that will take some time, too. So I hope you will cooperate with me in this effort to expedite the hearings today.

The first witness this morning is Mr. Thielemann.

Mr. REDWINE. Will you state your name?

STATEMENT OF R. H. THIELEMANN, STANFORD RESEARCH INSTITUTE, MENLO PARK, CALIF.

Mr. THIELEMANN. My name is R. H. Thielemann, associated with the Stanford Research Institute, Menlo Park, Calif.

Senator Murray and distinguished guests, my purpose in being here this morning is that it presents me with an opportunity to plead the case for the metallurgists and the people in industry in this country who are trying to provide the materials for the high-temperature applications that we need today.

We are constantly reading in the papers about the development of aircraft to fly at speeds of 1,000, 2,000, 3,000 miles an hour, millions and millions of dollars being appropriated for guided missiles where very high-temperature materials are required.

The day for atomic age for aircraft is coming where high temperatures are needed and today we do not have the materials to do the job that we want to do.

Now, in the development of the *Nautilus* as Admiral Rickover has said many times, 67 percent of the development money for the development of the powerplant on that submarine went into development of new metallurgical material.

We are faced with that sort of problem today in our whole technological development. If you will look at industry, everything is going to higher and higher temperatures, both in the defense picture and in the civil technological picture.

Now, I have prepared a chart here which I would like to show you where we are today in the development of high temperatures and where we have to go.

Back in 1941 when this country entered World War II, we were faced with the problem of developing a turbo supercharger for our bombers which would take us to altitudes where they would be safe from antiaircraft fire in Europe.

At that time, we had to develop high-temperature alloys that would do this job. We did not have them.

As a result, a tremendous amount of effort was spent to develop materials and we paid no attention to what materials were in short supply or anything else; we had to do the job.

At that time there were some cast alloys developed of which the first one in this chart is that alloy. It is a cobalt-base alloy containing 7½ percent of tungsten. That alloy is still being used today in the hot spots in our most advanced jet engines.

Now, since that time. of course, there has been tremendous effort to develop improved materials, which are better than this alloy.

But also since that time materials such as columbium, tungsten, tantalum, have been listed as being in short supply. They were not thought available in quantities large enough to warrant development of materials in which they were to be used in appreciable quantities.

So all the effort during the years since World War 11, and during the Korean period, has been on the development of alloys which contain large percentages of nickel, titanium, and chromite, the metals which we are told we have a lot of.

Now, this chart which I am submitting has the four highest temperature alloys that we have in the world today. All of these alloys are limited to temperatures of about 1650° Fahrenheit, yet we are talking of missiles, turbine engines, nuclear powerplants in which we need materials that are good up to 2,500° and 3,000° Fahrenheit.

All this means is that we have to put on some much larger glasses and take a look at the picture that we have before us and the metals that are available any place in the world that might do the job.

I have, Senator, a second chart which I will give you, which shows the relation of all the metals that we have and a periodic table with regard to their high-temperature strength.

In the center of this group are the three metals—iron, nickel, and cobalt. All of our high temperature materials are based on those three metals. Beyond that there are only four metals with which we have any chance of doing the job that we want to deal with.

Those metals are columbium, molybdenum, tantalum, and tungsten. All four of them are labeled in short supply.

Now, with regard to a metal like tantalum, we know that it is in short supply, so it does not appear to be anything that we can ever consider for large production applications.

Columbium during the Korean war, was the most critical material that we had. As a result of that, a very high strategic index number was applied to columbium and, as you know, the use of columbium today is practically zero because everyone is afraid to use it because they know if they do right away again we will not have it.

Molybdenum is a metal which, if it could overcome one shortcoming, would probably help us appreciably. The trouble with molybdenum is that at temperatures over twelve or fifteen hundred it suffers a catastrophic type of oxidation and literally disappears as oxide.

In jet aircraft where you have a highly oxidizing atmosphere or in missiles or in any other high-temperature application that is exposed to air, molybdenum has to be protected from oxidation and we don't have a good way to do it today, so we can't look to molybdenum to solve our problems.

The only other metal we have is tungsten. Down through the years tungsten has been labeled as material which we have enough of to make filaments and cutting tools and that is about all.

The jet aircraft builders today are told that they still must not use more tungsten than 4 pounds to 1,000 pounds thrust of the engine.

Now, with that hanging over our heads no one is going to look seriously at tungsten as a metal that we can use in large quantities, maybe to the tune of 30 or 40 million pounds a year, which will be required for the high-temperature applications that we see ahead of us.

Now, apparently it appears that we can have tungsten, not only domestic, but foreign supplies, in the quantities that would justify looking seriously at tungsten as the metal to do the job that is before us.

If it was up to me to make the decision, I would trade all the farm surplus we have to the Chinese for tungsten and I would store tungsten as a natural resource in this country and leave it there just like gold, so that we would have it when we need it.

I firmly believe, Senator, that we have to look ahead in this country to the technocracy that is before us, to the fact that we are going to have to have alloys to withstand these high temperatures and that in these four metals we have to look for our solution.

I would like to have assurance that they will be available in the quantities that we are going to need them in for a longer period of time, not just for 2 to 5 years, but over a substantial period of time, so that as development proceeds the metals will be available.

Now, that is my testimony.

The CHAIRMAN. Have you discussed these problems with any of the officials of the Government?

Mr. THIELEMANN. Yes, sir.

The CHAIRMAN. What has been your reaction?

Mr. THIELEMANN. They feel the same as I do.

The CHAIRMAN. They think that this program should be carried out to the fullest degree?

Mr. THIELEMANN. I discussed that at the powerplants meeting of the National Advisory Committee for Aeronautics in which the vice president of the engine builders was there. We talked this over.

They immediately said, "Well, if you can develop an alloy that is even good for another hundred degrees in jet aircraft today, it will be worth many, many millions of dollars to us, because to do the job we have to do, it is going to cost a lot more to try to do it any other way."

The CHAIRMAN. It is a serious problem and I would like to hear your suggestions on how we could trade all our farm surplus to the Chinese.

Mr. THIELEMANN. I don't know how you could do it; that is not my business, but I would rather have the tungsten than the farm surplus.

The CHAIRMAN. If a deal of that kind could be made, I would be in favor of it.

Mr. THIELEMANN. Put the tungsten in the ground. Give it to the department of parks or something, leave it there as a natural resource. This country is depleting itself of these things we need ahead of us. We need all of these metals we can get for a long period of time.

The CHAIRMAN. Are there any questions?

Senator DWORSHAK. I have one, Mr. Chairman.

Did you hear a witness testify yesterday before this committee that there had been produced about twice as much tungsten last year in the United States as was required for our total consumption?

Mr. THIELEMANN. I did not.

Senator DWORSHAK. Do you know that is a fact?

Mr. THIELEMANN. I imagine that is so, because of our limited uses, we were told you can use it for lamp filaments and cutting tools.

Senator DWORSHAK. Under those circumstances, do you think we are depleting our deposits in this country too rapidly and that we should to a greater extent consume tungsten produced abroad?

Mr. THIELEMANN. I want to see our natural resources developed fully and conserved. In the long-run picture here, if we are told to go ahead and develop the type of things we have to have, the domestic supply has to be fully developed and supplemented to do the job.

Senator DWORSHAK. What does it have to have?

Mr. THIELEMANN. Any metal today that goes into jet aircraft, cobalt is a shining example. We feel that if we don't have a supply of 30 million pounds a year of the metal that you cannot use it.

Senator DWORSHAK. You are in favor of developing additional sources of colbalt in this country?

Mr. THIELEMANN. Yes, sir.

Senator DWORSHAK. Of course, you know that in my own State of Idaho we are producing almost the entire supply of cobalt which we have currently in the United States.

Mr. THIELEMANN. I am very pleased to know that because in the Korean period, in World War II, cobalt came from Africa. Any day we could have been without cobalt.

Senator DWORSHAK. They have been producing a lot at the Coleri mine near Salmon, Idaho, but the refining of it has been delayed at least 2 years, I understand, because of imperfections in the refining process in the plant located at Salt Lake City.

Mr. THIELEMANN. Any one of these metals, nickel, cobalt, columbium, molybdenum, tantalum, and tungsten, should have domestic supplies and we will also need some from foreign sources, in my opinion.

Senator DWORSHAK. I was making a misinterpretation of what you were saying at first. I got the impression that you were inclined to believe that it was unwise policy to produce tungsten and similar minerals in this country as we have been doing and stimulating and expanding production because we may be found in the hazardous position of depleting our own deposits.

Now, are you fearful of that prospect?

Mr. THIELMANN. Yes; with every metal we have in the long run that may be true. Iron——

Senator DWORSHAK. Well, in the long run, how much time does that encompass?

Mr. THIELEMANN. Perhaps 15 years. At the rate we are going.

Senator DWORSHAK. You know during World War II about the only tungsten, or, at least, 45 to 50 percent the tungsten produced in the late World War II years, was produced by the Bradley Mining Co. near Stibnite, Idaho. At that time it was assumed that we had very limited deposits of tungsten in this country. But since then it is apparent that there has been widespread exploration, stimulated by Government assistance, and yesterday we were told that we produced in 1955 about 16 million pounds of tungsten while our total requirements were only half of that.

Would that indicate that we are depleting our resources or, rather, that we are exploring quite successfully in developing new deposits which we did not think we had?

Mr. THIELEMANN. It indicates that we are developing new deposits which we didn't think we had.

Senator DWORSHAK. Are you in favor of that?

Mr. THIELEMANN. I certainly am. I would like to know how much tungsten we can have.

I think an excellent case is columbium. Here was a metal of which we could get a million pounds a year in World War II, a byproduct of tin-smelting operation in Nigeria, so critical no one could use it.

With the program to stockpile columbium and the price differentials that favored it, other deposits of columbium have been discovered, some on our own continent in Canada.

They now tell us we can have 20 millon pounds of columbium a year.

Senator DWORSHAK. Is it correct to draw the inference from what you have said that while it is all right to build up these stockpiles as a vital part of our national defense with procurement from foreign lands if necessary, it is also very essential to our national preparedness to develop domestic sources to replenish those stockpiles if exhausted?

Mr. THIELEMANN. I believe we should do both, very definitely.

Senator BARRETT. Mr. Chairman?

The CHAIRMAN. Mr. Barrett.

Senator BARRETT. I would like to make a little observation and ask this witness one question.

I do not profess to know anything about these minerals. I know that they are strategic minerals and they are needed for the security of this country.

I do know a little bit about oil. I want to tell you something that happened about 15 years ago when I was over here in the House. There was a Secretary of Interior at that time by the name of Ickes,

and his Department was concerned about our reserves of oil in this country. He made the same statement then about oil that you are making today about these minerals.

In other words, he said that in 15 years our oil reserves in this country would be all wiped out and we would be on an importing basis.

The fact of the matter is that we are better off today as far as oil reserves in this country are concerned, than we were then. And the 15 years has expired.

I do not suppose I will be around here 15 years from now, but some of these young people will be then, and I venture the statement that 15 years from now that you will be proved just as wrong about your prediction that we are going to be completely washed up in this country as far as these minerals are concerned as Ickes was when he made the statement about oil 15 years ago.

Now, if you are right, then, of course, we are in a bad way in this country.

But I do not profess to know anything, as I said before, but I just seem to have a little intuitive knowledge that we have the minerals here in this country and we can produce them. Maybe they are not as rich as they are elsewhere in the world, but we believe that they can be found and that we can develop something for years and years to come of these various minerals.

I would rather look at that from that angle and to search for them, than to say we do not have them and we will not have them in 15 years, as you say.

So I just wondered if you are reflecting the opinion of better informed people on these minerals, or is this just your own opinion?

Mr. THIELEMANN. Let me say this: I am not so sure that Ickes was entirely wrong, either.

Senator BARRETT. I will tell you, the figures show he was wrong; so I am not going to argue that point with you, as to the reserves today.

Mr. THIELEMANN. Yes; but we are deficient by a million barrels of oil a day.

Senator BARRETT. That is because we are not producing it in this country. I am talking about reserves. I do not like the idea of your telling me I do not know what I am talking about, because that is something that I know something about.

You said that you are not sure he was mistaken. I say the figures show that he was mistaken.

Mr. THIELEMANN. I know we are importing a million barrels a day.

Senator BARRETT. I am not talking about importations. I am talking about reserves.

Mr. THIELEMANN. I think the metals picture, though, let us forget the oil, is a little bit different than oil in that we never have had enough of these metals to do anything real with them.

Senator MALONE. What metals are we talking about?

Mr. THIELEMANN. These four right here.

Senator MALONE. What are they?

Mr. THIELEMANN. Columbium, molybdenum, tantalum, and tungsten.

Senator MALONE. For your information, there is enough tungsten in Nevada and California to last the country a hundred years.

Mr. THIELEMANN. That is good.

Senator MALONE. Now we are arguing about how to get rid of it. There is no use going any further.

Mr. THIELEMANN. It is not an argument about how to get rid of it; it has been a question as to whether we had enough available to justify developing real uses for it.

Senator MALONE. They have it now. It is running out of their ears. That is what is the matter with this law. You are buying the cheap foreign labor product.

Mr. THIELEMANN. Six months ago I did not know there was enough tungsten to justify considering it.

Senator MALONE. The Secretary said there was no tungsten, no manganese, and I am here to tell you, and that is the reason I wanted to come to the Senate, to get the information before some of you fellows.

Mr. THIELEMANN. But, Senator, we have been told for 15 years that we could not have tungsten for high-temperature materials.

Senator MALONE. You have been told for 24 years.

Mr. THIELEMANN. For 15 years, I have known about it.

Senator MALONE. The Malone-Aspinall Act, that paid a price as much above the world price as the wage, standard of living and taxes and cost of doing business was above the chief competitive country, got this tungsten in a way so fast that now we are trying to save the producers.

It will do you good to read a copy of yesterday's transcript.

Mr. THIELEMANN. I want to.

Senator MALONE. You can say anything here you want to, but you have all the tungsten in this country you need if you will just pay the difference in the wages here, the taxes, and the cost of doing business, either through a guaranteed price or through a flexible tariff, over the chief competitive country, which might be Burma or China.

Well, you cannot get it from there and you do not need to get it from there.

I did not hear this man's testimony, but I am going to read it, Mr. Chairman, and make some comments on it.

The CHAIRMAN. Are there any other questions?

Mr. REDWINE. Mr. Chairman, I would like to ask a couple of questions.

Mr. Thielemann, what have been your connections in the past? You were with Wright, were you?

Mr. THIELEMANN. I was 9 years in the research laboratory of the General Electric Co. in charge of high-temperature materials development for mercury boilers and steam turbines, gas turbines, jet engines.

The next 10 years I was development metallurgist at Pratt & Whitney Aircraft at East Hartford, and since last July have been at Stanford Research Institute.

Mr. REDWINE. Mr. Thielemann, what is the growing use, if any, in the atomic-energy field?

Mr. THIELEMANN. Of tungsten?

Mr. REDWINE. Yes.

Mr. THIELEMANN. It could be very appreciable. One of the problems in the development of a nuclear-powered airplane is to get shielding which will protect from gamma radiation, get the shielding close

enough to the reactor so that the weight of the shield can be as light as possible.

The two materials that you have that are interesting are lead and tungsten. Lead is obviously out because it cannot stand the temperatures.

There is every indication that tungsten or heavy tungsten alloys will meet the requirements. We are working on that now.

Mr. REDWINE. That is all I have, Mr. Chairman.

The CHAIRMAN. Your testimony is very important to us. If you care to make a further statement after hearing this discussion this morning, we will be very glad to have your supplemental statement before us. We regard this as a highly technical matter and you are qualified in the highest degree to give us information on it.

We are very glad to hear you.

Mr. THIELEMANN. Thank you, Senator. Don't forget that the people who need these high temperature alloys in military aircraft today are still told they can only use 4 pounds of tungsten per 1,000 pounds of thrust. As long as that exists, they don't have it. It is not abundant.

Senator MALONE. It is running out of our ears.

Mr. THIELEMANN. The users don't know it.

Senator MALONE. I hope that someone is here to report this hearing.

Mr. THIELEMANN. It still does not do any good. They can't use it.

Senator MALONE. We can find out who is restricting them. I think we can call this fellow, whoever it is; we can find out who the fellow is that is restricting it 4 pounds to a 1,000 pounds of thrust of the engine.

Mr. THIELEMANN. I am not sure about the four, but it is a figure in that range. However, I know it is in the military procurement orders.

The CHAIRMAN. Thank you, Mr. Thielemann.

Mr. THIELEMANN. Thank you, Mr. Chairman.

The CHAIRMAN. Mr. Williston.

FURTHER STATEMENT OF S. H. WILLISTON, CORDERO MINING CO., PALO ALTO, CALIF.

Mr. REDWINE. Mr. Williston, you heard the testimony of the last witness. Can you give us a little light on that?

Mr. WILLISTON. I can give you considerable light on that particular thing, and I can tell you how that originated.

It so happened that I was head of the supply division of the Defense Minerals Administration in 1950, under James Boyd, in charge of the sources of all of these materials.

At that time the supply of tungsten was very short. We were producing, as I recall, and I may be slightly in error, 3 or 4 million pounds a year, one-fifth of what we are doing now.

At that time the Defense Department wanted 40 million pounds a year, which was more than the total world supply. They were given instructions that there was not that much tungsten available. They were told to design away from tungsten.

Those orders to the Defense Department have not been changed since 1950. That is the answer.

I might add a little bit. I cannot be sure this is right, but I am reasonably sure.

You will recall that during the Korean war we were forced back from the northern parallel to Pusan; we were forced back because there was no tungsten carbide core antitank shells available. They were not available because we didn't have enough tungsten.

We went back to the northern parallel when the tungsten carbide shells were flown in. I think that answers it.

Mr. REDWINE. Mr. Williston, when you use the phrase "design away from tungsten," let us be sure what you mean by that.

What you mean is that they substitute materials?

Mr. WILLISTON. They would substitute materials wherever possible, that they were given strict limitations that tungsten would not be available; they could not count on it and they had better not design it in their equipment.

That was in 1950, and that has never been changed unless it has been changed within the last 90 days, and the word has not yet trickled down.

The Departments of the Army and Navy are very obedient. If they are given orders from above, they must do such and such a thing, they do it. The same thing applies to some of these other metals.

Senator MALONE. They were using molybdenum as a substitute?

Mr. WILLISTON. Partially. I speak of tungsten because I was in charge of the supply of defense minerals at that time and I was in contact with the other services and the Assistant Secretary of the Army, and I do know what requirements were and I do know those orders were given.

They have never been changed to anybody's knowledge. That explains to Mr. Thielemann why the manufacturers are still told they can use 4 pounds to the thousand. Yet, in the meantime, the supply of tungsten from this country alone is now 500 percent of what it was then, and the supply from foreign sources has increased by 50 or 100 percent. So there is now available, instead of a total of 25 million or 30 million, a total of 60 million anyway, and the present adverse report from ODM would eliminate the present supply of 15 million almost entirely.

The policy of leaving the minerals in the ground is a very appealing policy. It is so appealing that is why it has gotten so much support.

Senator BARRETT. Supposing you leave the minerals in the ground and you don't know where they are, like the Indians. Supposing our source of supply is shut off in an emergency. How appealing is that policy in that case?

Mr. WILLISTON. It is absolutely worthless. You can destroy the country.

Mr. REDWINE. Mr. Williston, are you familiar with the order that went out in 1950 with respect to columbium and tantalum?

Mr. WILLISTON. Yes.

Mr. REDWINE. Will you tell the committee what happened?

Mr. WILLISTON. The columbium and tantalum picture in 1950 was a very complex one. Columbium, in rarity, is about equal to silver. Silver mined for itself is 91 cents an ounce, roughly $10 a pound. Columbium, up until that time, had been useless.

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It was a byproduct in Nigerian tin. Nobody had any use for it. During the war it reached tremendous importance. The Office of Price Administration said, "We don't care whether the Government gets columbium or whether it does not get columbium, the price is not going to be raised above $1.50 a pound."

No miner could mine columbium for $1.50 a pound for itself alone. After a great deal of argument, they managed to get the $1.50 bonus on it. It was still so much below the cost of finding columbium that the only place it could be obtained was again as a byproduct, columbium.

I have an amusing thing that would interest you on that from the head of the Munitions Board in 1949, just before the war opened. I talked to him and he said, "What does the Munitions Board need?" I happened to be on two of the Advisory Committees on there. He said, "Possibly I should not tell you this, but in top secret conference, I will tell you that we need columbium worse than we need anything else, but it is labeled top secret so we can't ask anybody to produce it."

Actually, a great deal of the expenditures on titanium metal at $20 a pound was a substitute for columbium at $1.50 a pound. The Defense Minerals Procurement Administration did their utmost to advocate a program for columbium at $10 a pound. They were turned down flatly. Yet at the very time that they were turned down on columbium at $10 a pound, the Air Force in 1951 was telling me, "It is costing us $75 a pound for every pound of columbium we don't get."

Now, those orders were passed out. There were less than a million pounds a year available. They needed 20 million pounds. At the very time that they needed that, we were bucking a situation that we could not get $10 a pound for the same material.

Mr. REDWINE. What is the situation today in respect to columbium, the military use of it?

Mr. WILLISTON. They are still designing away from it so far as the Army is concerned, because there was the old order and nobody has ever changed it. There are extensive columbium deposits in Canada which can supply it at a materially reduced price. If they had even thought of putting a price on columbium which approximated its scarcity, they would have had columbium running out of their ears in tremendous amount long before now.

Now they have columbium coming in excess of their limited design requirements. The order has not been changed. Now, if the armed services were told that they could have 5 or 10 times as much columbium, they would design up to it. As long as they are told they cannot, they won't.

Senator MALONE. I am going to ask Mr. Williston what would be the difference in price in the end product in an engine with the resistant qualities that it needs, paying $1 a pound or $10 a pound for columbium.

Mr. WILLISTON. I could not give it for columbium, but I did it for manganese and steel and the doubling of the price of manganese would increase the cost of steel by the same amount as a 1-cent increase in wages in the steel industry.

Senator MALONE. That is about right. Could you get this information for us—how much it would increase the price of the jet engine?

Mr. WILLISTON. The difference of $1 and $10 for columbium?

Senator MALONE. Yes.

Mr. WILLISTON. It would triple the life of the unit in a jet engine if they were able to use excess amounts. Taking the figures of 1950, if they paid $10 and had enough, instead of using $1 and did not have enough, they would save $65 a pound on it.

Senator MALONE. It does not cost very much to get it?

Mr. WILLISTON. No. I think it took 3 $5,000 units to replace 1 $5,000 unit for a relatively small amount of columbium.

Senator MALONE. The same is true of tungsten. The same thing is true of all these critical materials because you use such a small amount of them. They are heat resistant, tempering or hardening materials.

Mr. WILLISTON. I have one more figure which might help you there. If you take the total value of all of the ores and concentrates which are used in the manufacture of an automobile, the total value of all of those materials, copper, lead, zinc, aluminum, steel and all, it is less than $100 in a unit that sells for $3,500.

The other $3,400 is manufacturing cost, taxes. $100 is the cost of the materials that it is made out of. If it cost $200, it would change the cost of the finished mechanism by possibly 3 percent.

Senator MALONE. That is very important, Mr. Chairman. The public gets the information that you want to pay $55 a unit for tungsten when we can buy it for $41 from a foreign nation. The difference between $41 and $55 is $14 a unit and you could not find it in the price of anything that tungsten goes in.

Is that a good statement?

Mr. WILLISTON. As far as I know, that is right.

It might be of interest to note the importance of mining to the maintenance of State governments in the West. I have to give these figures from memory, but they are approximately correct.

In the State of New Mexico something like 80 percent of the tax revenues come directly from raw material resources. In the State of Colorado it is something over 50 percent. In the State of Utah it is over 70 percent. In the State of Idaho it is in excess of 65 percent and in the State of Nevada between 35 and 40 percent.

I do not recall the figure for Arizona, but it is probably in the higher portion of this scale.

If the raw material industries in these Western States are destroyed, the tax revenues of the States are destroyed and many of the Western States will be in a most difficult position.

The CHAIRMAN. Senator Case, do you wish to make a statement?

STATEMENT OF HON. FRANCIS CASE, UNITED STATES SENATOR FROM THE STATE OF SOUTH DAKOTA

Senator CASE. Mr. Chairman, I came primarily to attend a hearing. I am a cosponsor of the bill which you introduced which has to do with the mica program, particularly, and some of others, of course.

The CHAIRMAN. I knew you were interested and were cosponsor. I thought you might have something to offer at this time.

Senator CASE. I am interested, Mr. Chairman, but I would rather that time be taken now by these out-of-town witnesses. When you come to marking up the bill, if I can be of assistance, I will be glad to do so.

May I say in commendation of yourself and the attitude of the Senators on the committee that I know that you and Senator Malone and your associates are appreciative of the problems of the mining industry, and I think the point of view that was expressed by the last witness is one that is held by people who live in the West or in the mining areas.

I don't include merely the West. If we could once recognize that the actual cost of the finished product in paying a decent price for these raw materials would be infinitesimal compared with the advantages resulting from the help given to the general economy, the taxes that would be paid, the wages that would be paid, it actually would not cost the Government anything in the final analysis. We have made a great contribution to the general welfare.

The CHAIRMAN. That is an excellent statement.

Mr. Long will be the next witness. You may give your full name and organization you represent.

STATEMENT OF W. LUNSFORD LONG, PRESIDENT, THE TUNGSTEN INSTITUTE, AND PRESIDENT, MANGANESE, INC., WARRENTON, N. C.

Mr. LONG. Mr. Chairman, I am W. Lunsford Long, of Warrenton, N. C. I am president of the Tungsten Institute which is the trade association of the domestic producers of tungsten.

I am also president of Tungsten Mining Corp. and of Manganese, Inc. I am engaged in the business of producing tungsten and manganese in the United States.

I am one who is about to die in the tungsten business. I speak of the notice by GSA that after May 30 no further deliveries will be accepted. So on June 1 the tungsten industry in the United States is going to close unless in the meantime you gentlemen take some action to prevent that catastrophe.

There is no possibility of our being able to compete with foreign production under the existing tariff schedules. So there will be nothing left for the industry to do except to close.

As Mr. K. C. Li, Mr. Segerstrom, and Mr. Sullivan told you yesterday, there is no doubt that if the mines do have to close, then most of them are going to be destroyed and those that can be reopened in the future will have to be reopened at enormous cost and enormous delay in point of time.

It is inconceivable to me that this Government would permit such a course to take place with the world in the condition in which we find it today. We have come from a position of being an inconsiderable producer of tungsten to the position of being the leading producer of tungsten in the free world.

The only country on earth that produces more tungsten today than does the United States is Red China. Its production, the size of it we do not know exactly today. We do know that they are operating and that Russia is using tungsten far more freely than we are in the heat-resistant field, in their airplanes.

I wish Mr. Thielemann had time to tell you today of his own examination of a Russian plane with 50 percent tungsten alloys in it where we are talking about hoping to get a 25-percent alloy as a result of the

work which he is doing for the tungsten producers of this country at Menlo Park, Calif.

In an effort to save ourselves, we banded together and employed the facilities of Stanford Research Institute to acquaint the world with two things. First, that tungsten is now in adequate supply in this country, and can be had in even more adequate supply if you need it, just as under the impact of the needs of the last war we sought for tungsten in North Carolina where it had never been found and where it was not supposed to exist, and found it there in 1942 and have developed the biggest tungsten potential ore body on this hemisphere, North and South America included, transformed a cottonfield within 150 miles of Jamestown where the first words of English were spoken on this continent into the biggest tungsten body.

That proves what you can do if you have the motive to seek, because if you seek, in the language of 2,000 years ago, "Ye shall find." We have found in America and accomplished the impossible in tungsten.

In Salt Lake City, in 1950, when Dr. Boyd, who was then head of the Bureau of Mines, said that it was imperatively necessary that we increase production of tungsten in this country, at a meeting there we told him that if he would give us a 7-year guaranteed price that we would become self-sufficient in tungsten.

Dr. Boyd told me, who was speaking for the group, "Don't be that optimistic. I know that you can't accomplish that desirable end but do the best you can."

Well, gentlemen, we have accomplished it. Last year we produced in this country 15,669,000 pounds of tungsten, and we consumed 8,961,000 pounds. Today we are producing that same 15 million pounds a year and our consumption is increasing. It came up last year. This first quarter of this year has been higher than the highest quarter of last year. We are now consuming at a rate of 10 million pounds a year. We are producing 50 percent more than we are at present consuming.

Gentlemen, we are not consuming because of the fact that, first, we have from our military a restriction and I want to give you for your record what the restriction is. There it is. It says:

> D. It is therefore the policy of the Department of Defense that the Secretary of each military department concerned shall assume responsibility for assuring that maximum effort is directed toward attaining optimum efficiency in the use of the designated materials in aircraft turbine engines. The military departments shall direct their efforts to attain the following objectives:
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> 1. That, except where performance would be prejudiced, each turbojet engine shall consume for its construction, on a gross weight basis, not more than 13 pounds of cobalt, 63 pounds of nickel, 110 pounds of chromium, 0.35 pound of columbium, 5.5 pounds of molybdenum, and 4.6 pounds of tungsten for each 1,000 pounds of sea level static thrust delivered by the engine.

Senator DWORSHAK. What is the date of that letter?

Mr. LONG. July 14, 1955. Prior to that the limitation was to 3 pounds. They ought to have given me a bed in the Pentagon years ago, I stayed over there so much. I have, myself, representing the tungsten industry, asked that the Defense Department lift this restriction now. They have refused to do it.

They said, "If you can show us that you can and will develop an alloy that is better than anything that Dr. Thielemann was telling you

about this morning, then we will lift this restriction, but in the meantime, we do not agree with ODM. We do not think that we have more tungsten than we need and we do not think that you can produce tungsten in sufficient quantity for us to be able to build the best airplane engine that the world has ever seen."

We said, "All right, gentlemen, we are going to do it." Stanford Research Institute this week is sending to Pratt & Whitney a new alloy with 25 percent tungsten that we think will stand 1800° temperature. They said, "We cannot look at an alloy unless we know that we have anywhere from 20 to 30 million pounds of that material available annually because there is no use in designing a thing that you can't make and use in quantity."

We said, "All right, we are producing today 15 million pounds of tungsten. We can double that in the United States if you want us to double it. If you don't, you can go to South Korea tomorrow morning and buy it at a low price from Syngman Rhee. He is offering it at public auction."

I think, gentlemen of this committee, it is absolutely beyond my comprehension why this Government today is not obtaining from everywhere in the world it can get it all the tungsten it can get at the best price, of course, at which it can buy abroad and bring it over here and put it underground and keep it.

Nothing on earth can change that chart that Mr. Thielemann has filed with you. Tungsten is the most heat resistant of all the metals; to melting point is 6,170° F. No other metal has that capacity. No other metal has anywhere in its neighborhood its ability to stand up under heat, under recrystallization and stress.

Why on earth we should be considering here today the possibility of permitting this industry to die in this country is beyond my comprehension. Should we worship the golden calf to that extent? Shall we bow down before the Bureau of the Budget until we lose our minds in an effort to save a dollar, and is that the impelling reason?

That is not the impelling reason. We spend money with an inconceivable free hand in all sorts of things. Yet in respect to tungsten we can't spend a paltry few million dollars. It cost $175,000 to train an aviator and put him in a jet plane. You cannot give him the best jet plane in the world because you will not use the most heat resistant materials in it. It is a shame and a crime. We build a B–52 and it costs $9½ million to put it in the air and next year that is wiped out; we have a better airplane; all these old things are obsolete and are out and are charged off. Why can't we use a little bit of money, gentlemen, to preserve the domestic basic economy of this industry in this country?

On the other hand, we have a great deal of morality, of which I approve, with respect to our commitments abroad. There are 14 contracts today in existence with big producers of tungsten in various countries in the world outside of the United States who are shipping here every day and are going to continue to ship here, some of them until December 1959. Not 3 years, as asked in one of the modest bills introduced here, but 3½ years.

Why can we accord to the foreign producer of tungsten a longer contract, a better price, and keep him alive when we permit our people to die on June 1?

Senator DWORSHAK. Do you know where all this foreign tungsten is going? In the national stockpile?

Mr. LONG. It is. There are left undelivered under those contracts somewhere between 1½ million and 2 million units. Those prices average about $55. Those are foreign prices. Gentlemen, if you pay $63 to any American producer and you pay a foreign producer $50, I can tell you that you are getting immensely cheaper tungsten at home for this simple reason: This flows back directly into the Treasury of the United States, money from the domestic producer, in the form of direct income taxes on him and his employees that give you a credit balance in your Treasury.

I can prove to any man that will believe figures that it is cheaper to give the United States producer $63 than it is to give the foreign producer $45. Now, there is no question about that.

Take our cost of production in our mine at home. We are a little company. We are not big business. We are a little company that was built up from nothing in 12 or 15 years to the largest producer of tungsten in this country, and the largest producer of manganese in this country, and every bit of it has been built up by plowing back earnings, by working like the devil and we have gotten no money at all from the Government except pay for goods delivered.

Now, there is no question about the fact that our cost last year in tungsten was around $50 a unit. We made $13. We paid the Federal Government, not counting what we paid the State government, about a million and a half dollars of it back. As much as the whole profit that we made went right back to Uncle Sam. The tungsten that he bought from us did not cost him $63. It cost him less than $50. If you shut us down you are not going to get a nickel from the gentlemen in Bolivia or Portugal or Australia or Canada or Brazil or Argentina. These contracts are all over the world.

Why should we accord the foreign contract a longer time than we give our own domestic producers? It is inconceivable to me that we are going to continue a policy that would shut us down and keep those foreign operations going.

Now, I agree with Mr. Thielemann that we ought to take into this country every bit of tungsten that we can get from anywhere we can abroad. I certainly would not approve or would not suggest that we lay down on any contracts that we made with anybody.

We are going to see those through, but I certainly would not let my contract run out with my people at home and I would keep my contracts going with our friends abroad. I would treat the home folks as well as the other fellow and particularly when the home folks are contributing to the national economy.

I take the view, Mr. Chairman, that in respect to tungsten, in respect to manganese, in respect to all these matters here before you, that we ought to keep production alive in this country. We have brought tungsten to a position where it is no longer in the classification of what we used to call strategic metal, when we did not produce more than half of what we need. Now we are producing all we consume. Now we are momentarily self-sufficient under the impact of your program.

We were pitifully inadequate in our production until we had this guaranteed market. Now I do not blame American industry for

purchasing it as cheaply as they can. But I do think that the Government of the United States ought to create an atmosphere in which they can't buy cheaper abroad than they can buy here at home.

We know perfectly well that we cannot pay a man $2 an hour and compete with somebody in South America paying $1 a day or with Syngman Rhee who gives them a cup or so of rice. There is no possibility of anybody reasonably expecting you to compete.

We have to have a competitive tariff as Senator Malone has sought his best to get accomplished. That is my idea. Senator Dworshak asked my associate, Mr. Segerstrom, yesterday what did he think ought to be done for the long term to take care of this situation.

My answer to that is that I believe that now, as I have always, that it is through the means of a proper tariff, that we ought not to go into this OTC and any trade treaty act and tear down our tariffs; that we ought to raise our tariff to give a realistic protection on today's level of material and labor costs to the American producer.

If that condition changes, reduce it in the future, but unless we are going to be protected that way, then we ought to be protected some other way. Maybe we ought to do like we do in cotton. Buy a quota. You can't import the cotton. There is an import barrier. Maybe you ought to put a quota like you have in wheat.

Now, the theory of the production bonus bill interested me very much when it was presented to me first. I believe with all the fervor of my being, and the sincerity of my convictions, that the producer of basic raw materials, whether on the farm or in the mine, ought to be treated with the same philosophy.

It is an accepted principle of government by both political parties that we are going to recognize the obligation of government to have an atmosphere in which our farm population can survive and prosper. We argue about whether we want 90 percent of parity or 82½, but you don't hear anybody say we ought not to do anything.

Now, that same philosophy ought to apply to the producer of all raw materials. God knows, when you come to stockpiling, it applies with much more ease and facility to these imperishable materials. Tungsten and manganese you can put away and keep. They are just as good 1,000 years from now as they are today.

There is no reason on earth why the same fundamental philosophy should not apply and that there should be some method devised to keep our mines at work. Now, in the instance of tungsten, what we call the omnibus bill, I do not see practically, where we are producing more than the country is consuming, that you would be able to sell 15 million pounds in a market that will only take 10 million pounds. You would get your price down so low that the difference would be so great that it would be shocking.

Now, where a commodity is produced in insufficient quantity in this country, if you wanted to use the direct subsidy as the agency of your continuation of the domestic industry, then it could work, but I don't see how it could work in tungsten.

With respect to the many bills which we have here before us, of course, the most desirable bill is the bill, as I see it, introduced by Senator Malone and Senator Barrett, a simple 5-year extension of all the programs.

The trouble with that is that apparently it is not possible for us to be optimistic enough to think that the administration will accept it.

I want to ask you gentlemen today in all sincerity in the name of an industry that is going to die as surely as I am sitting in this chair, don't let us, in the interest of doing what is best, do like we have done in the farm situation and find ourselves accomplishing nothing for this industry.

If we can make some sort of compromise that will let us live, 2 years, 3 years, 4 years, anything, let us do that, rather than insist on passing what ought to be done.

I hope and I ask that the friends of this industry on this side of this table will explore for the dying strategic materials industries in this country with the administration what can we get through this time in time to save us?

Then let us ask the committee to work out in a spirit of compromise that solution, because unless we can get something done, we are bound to close.

I want to say that the same reasons I have used in talking about tungsten apply also to manganese, except there you have an utterly different picture. We produce only 10 percent of our needs in this country in manganese. The extension or nonextension of the program has no impact at all on our operation in Nevada.

We are under a contract with GSA which runs until December 31, 1960. We never were under the domestic program, and we could not come under it. We are under a contract with the Government. So in that respect I have no financial interest. I am very much concerned in Virginia, in Arizona, in New Mexico, where we have properties and have been delivering under these programs.

We have an excellent plant shut down that was supplying the stockpile at Deming, N. Mex. One-hundred and fifty men were released and turned loose, perhaps sitting idle waiting to see what is going to happen. We were also supplying ore to the Wenden stockpile when that closed.

I would like to see manganese very much, indeed, treated with exactly the same philosophy we are talking about here, but manganese does have another 2 years to live. Tungsten has 5 weeks.

It may be best, and in your wisdom I would ask that if you do that—you make one bill—if you deal with all the others, because tungsten is going out on July 1, maybe it is a good idea to take that out and deal with it separately to enable the industry to keep alive.

I firmly believe that if we are kept alive within a period of, say, 3 years, by our combined effort in the research field, we will increase consumption in tungsten to such an extent we will be able to walk on our two feet.

That is my thinking, and belief and that is what the industry is resolutely determined to seek to do.

I thank you for having given me so much time.

The CHAIRMAN. You have made a very impressive statement.

Mr. LONG. I will be glad to try to answer any questions if anyone cares to ask any.

The CHAIRMAN. We are under great obligation to you for coming here and making this very fine statement. We want to thank you for your appearance here.

Do you wish to ask any questions, Senator?

Senator MALONE. I don't think we can improve on the statement at all. There were one or two things I would like to emphasize. I join with the Chairman. You have made a fine statement.

Mr. LONG. Thank you.

Senator MALONE. I think you have already said that the principle applies to all critical materials, if, as you said, there was a duty or tariff that made up that difference in the wages you pay or if there is a guaranteed price over the years ahead that really amounted to that same amount.

Now, you are familiar with the fact that in 1954, for the first time in many years, the Senate Finance Committee recommended to the Senate, and it was adopted, to raise the depletion allowance from 15 percent up to 23 percent for all these minerals—Mr. Chairman, I will furnish a list of the minerals for this record.

You are familiar with that?

Mr. LONG. Yes.

Senator MALONE. What did that do? Did that have an effect on the mining of these materials?

Mr. LONG. Yes, it helped in some instances more than others because, as is always the case, you don't get your depletion unless you have enough earnings to justify it, because 50 percent of the net would get you before you get the full benefit of the 23 percent.

Senator MALONE. Now, if this was continued under either one of the policies which you so ably outlined, but have the principle here so that in the years ahead, or 15 or 20 years, you can see that difference in the wages and cost of doing business here, and the chief competing nations was going to be taken out under a guaranteed price or a duty, then it might reasonably be expected that all of these mining operations would profit by that raise in depletion. Is that true?

Mr. LONG. That is true.

Senator MALONE. Now, I have reason to believe, Mr. Chairman, as I have said before, that any simple extension of an act that is already operating successfully would meet with approval beyond the action of Congress. I think it will. I do not know about new legislation, but if we need new legislation besides an extension, my opinion has always been that the Congress is a separate entity and we come from all sections of the country and when you finally add it all up, the legislative branch of the Government should do what their judgment dictates.

You are also familiar with the fact now that it looks as if we can produce all the uranium we need.

Senator DWORSHAK. Mr. Long, I concur heartily with the sentiments you have expressed concerning the tungsten industry. We need a healthy industry because of its importance to national preparedness.

Likewise we find the same conditions obtaining in other sections of our industry. We produce only a small proportion, 5 or 10 percent of the cobalt produced in this country. We produce 1 or 2 percent of the antimony we consume in this country.

I am wondering if you have any suggestions—I asked Mr. Segerstrom yesterday afternoon—if we can do anything to effect a partial use of the tungsten we are producing in the United States by industry in this country.

I was amazed yesterday when I learned that not a single pound of our domestic production is used by industry. Do you think that is correct?

Mr. LONG. Not a single pound.

Senator DWORSHAK. I also understand that some of our biggest processors, General Electric, Union Carbide, Sylvania, are interested in the production of tungsten, the mines where the total output is sold to the Government, although these same companies purchase the tungsten they use in their own operating facilities from abroad; is that correct?

Mr. LONG. Yes.

Senator DWORSHAK. It is hard for me to reconcile that inconsistent situation. I agree with you wholeheartedly. I am not arguing with you, I want the tungsten industry to continue to produce as you did last year, agreeing with you that we ought to develop through research expanded use of tungsten and I certainly join you in deploring any restrictions made upon the use of tungsten and these other minerals in our national preparedness program by the Defense Department. I think that that is illogical and indefensible.

But can you give this committee suggestions as to how we can try to reconcile this disparity? I do not think it is entirely one of price.

We have a right to ask leaders of industry, private enterprise, in this country, to try to work out some program which will enable them to use some of the tungsten produced here instead of purchasing tungsten from abroad.

What if the users of lead, zinc, and copper in this country bought all of their minerals abroad because they conceivably might buy them cheaper than they can in this country? That would be an illogical situation.

Would you not agree with me in order to strengthen the tungsten industry it is incumbent upon us to try to work out some practical, feasible program, so that industry can use domestically produced tungsten?

Mr. LONG. I would have a tariff. As I said in my statement, we ought to put a tariff high enough to give us protection and compete among ourselves for the domestic business.

Senator DWORSHAK. You are a practical man; you know that both major parties are committed to free trade and that instead of building up tariff protection, we are tearing down tariff walls. You know that?

Mr. LONG. Yes, sir. I am a Democrat from North Carolina, but I have never been committed to free trade and I never will be.

Senator DWORSHAK. You know the Democratic Party is?

Mr. LONG. No.

Senator DWORSHAK. It is not committed to free trade?

Mr. LONG. It is not committed to free trade, not the Democratic Party that I know of.

Senator DWORSHAK. Which Democratic Party are you talking about?

Mr. LONG. The one that is having the Woodrow Wilson memorial dinner tomorrow night. I belong to the same party they do and they are not committed——

Senator DWORSHAK. You are a Jefferson Democrat?

Mr. LONG. I am a Woodrow Wilson Democrat.

Senator DWORSHAK. Can you give us any suggestions as to how we can solve this problem so that we can use American tungsten in American factories and plants?

Mr. LONG. The only way I know of that you can keep anybody from buying something that he needs in the cheapest possible market is to make it impossible for him to do so. And we can do that through the medium of a quota or importation.

Senator DWORSHAK. Is the world production of tungsten such that we may anticipate in the next few years that this foreign tungsten will be shipped to this country in direct competition with our own tungsten?

Mr. LONG. That is right. If we say our price is $25, they will say $24.

Senator DWORSHAK. The world demand for minerals at the present time is at an all-time peak in copper and is very high in lead and zinc. We know that a few years ago, and we anticipate in another few years, we will face the same situation where prices will be depressed below the cost of production in this country by virtue of the dumping of foreign minerals in this country.

Mr. LONG. That is right.

Senator DWORSHAK. What can we do to fortify our industry?

Mr. LONG. I feel this, that if we can get it clear in industry's mind that tungsten is available, that the consumption of tungsten is going to have tungsten in a position comparable to that of copper today where the whole world supply is inadequate because if we were using the full properties and characteristics of tungsten today in the areas of high heat applications in jet turbines and nuclear programs and atomic energy and missiles for military use, the whole world supply of tungsten would be inadequate to supply those needs.

Senator DWORSHAK. And automatically the price would be increased and then that would be to the advantage of our own domestic producers.

Mr. LONG. That is right.

Senator DWORSHAK. Do you think any restrictions ought to be placed on domestic production through the medium of price support like $55 as was suggested yesterday?

Mr. LONG. Yes, that embodied exactly what the tungsten producers of the United States, who met here in December at the request of OMM and appeared before this inactive organization known as OMM, told them we thought was the minimum that should be done.

We agreed unanimously in the industry that we would recommend that they would give us a price of $55 instead of $63 and give us 3 years instead of 5 years, that we were going to do everything we could in the industry through the medium of research on our own part and stimulating research by others to enable us to get out and walk on our own feet.

That is what I recommend to this committee as being the minimum proper thing that we should do.

I hope that this committee can get the administration to cooperate with them.

Let us give these fellows a little more time. Let us treat them as well as we are treating our foreign contracts and carry them to July 1,

1959, but we won't let them pay us as much income taxes as they have been doing. We keep $8 of it by reducing the price from $68 to $55.

Senator DWORSHAK. Will you make us the promise or assurance on behalf of the institute that if and when a Democratic administration takes over in this country, you will utilize and exhaust all your influence and resources to get the same treatment for your industry?

Mr. LONG. This program was inaugurated under that regime, and the strategic metals industry was built up.

Senator DWORSHAK. So far as expanding the production of minerals, you do know that within the period of a few years, going back just a few years ago, the record shows that our Government spent about a quarter of a billion dollars, $245 million, to encourage and stimulate the production of minerals abroad.

Now, that was done in direct competition and we probably yet have not felt the full impact of that policy, but that was done a few years ago.

Mr. LONG. I am quite well aware of that.

Senator DWORSHAK. That is all. As long as you are aware of that and I assumed you were, I just wanted to emphasize it because regardless of whether the Republicans are in power or the Democrats are in authority, I join with you in urging and advocating that we strengthen our domestic industry insofar as the production of tungsten is concerned, or any other minerals.

Senator MALONE. It has been outlined by the senior Senator from Idaho, that companies will collect the subsidy here and mine it and sell it to the Government and buy whether they mine it, or not, buy it from low-wage producers abroad.

Senator BARRETT. The competition makes that necessary for them to do it. They could not do it otherwise.

Senator MALONE. The point I am making is this: if you had a tariff or duty that took the profit out of that and equalized the production price here, they will not be doing that, because it is simply a question of making up the difference of wages and duty that they pay at the water's edge so it does not pay them to buy that.

Once you are out of the tungsten business, what happens to the foreign tungsten price here?

Mr. LONG. They will jack it right up.

Senator MALONE. As a matter of fact, then, that is the history of all these operations, all minerals, tungsten, and everything else.

So the argument that the public is entitled to a cheaper price does not bear much water, does it?

Mr. LONG. In that connection I want to call to the committee's attention this historical fact: that when the ceiling of $65 was put on tungsten the world price was $100. We delivered at $65 for a year when the world price was way above that.

We never got the benefit of the high price of tungsten which the foreign producer got.

In London the price was $90. We were stopped at $65.

Senator MALONE. That is my point exactly. They come down now below your price to sell it, but once you are out of the business it goes back to $90.

The CHAIRMAN. Senator Barrett.

Senator BARRETT. I want to commend Mr. Long for the splendid statement he has made here this morning.

Mr. LONG. Thank you, sir.

Senator BARRETT. I am very much in accord with your views on the matter, generally speaking. There are 2 or 3 points that concern me a little bit.

No. 1. I think that this committee ought to try to rationalize the best way to get some legislation. It is not a question of what we want. It is a question of getting what we can get.

It seems to me that we ought to take an overall look at the way the program has worked out and say this part of it has been very successful, and we would like to have it extended for a reasonably short time anyway, until we can get a policy adopted here that is sound for the country.

I think that is something along the lines you have in mind. I think that is an excellent suggestion.

No. 2. While I would agree with you about the tariff matter, it seems to me we ought to look at this problem more from an import-quota basis. I think we could make a better case for that, and apparently the Senate at least is inclined to go along with that.

We had that issue up in the farm bill, and the vote was very close, as you may know, 47 to 43.

So that the same policy applies to other commodities as it does to these strategic minerals.

Now, the third point I have in mind, and this bothers me and I would like to have your idea about it. I quite agree with the suggestion you made and Mr. Thielemann made, that it would be to the best interest of this country to get these rich tungsten deposits here in this country buried in the ground like the gold buried at Fort Knox, but I am wondering if a stockpile, an adequate stockpile, would not be a threat over the market and also be a deterrent for the development of our own supplies here in this country, if we did that very thing.

Would we not be defeating the thing we need to do by doing that?

Mr. LONG. It would be unless you kept the key to the stockpile as you have to the strategic stockpile. You can't take anything out of that except by Presidential declaration of an emergency or consent of Congress.

I would put a restriction on it; it could not be resold except at the price equivalent to the one you paid for it.

Senator BARRETT. I have had some experience with these stockpiles in other lines, particularly in wool, and it has worked very disadvantageously.

Mr. LONG. No question about that. It hangs freely over the market; it depresses the market. It could not have any other effect.

Senator BARRETT. We would have to be sure that we would be protected against that, or we would be in trouble in developing our domestic industry here. To my way of thinking that is of vital importance, maybe even more so than getting a stockpile from Red China.

I would go along with both of them, if we could be sure that we were protecting ourselves so that we are not destroying the necessity and the incentive to develop here in this country and this hemisphere the supplies we will need.

Mr. LONG. Mr. Chairman, may I say one thing that Mr. Thielemann did not say with respect to himself? Mr. Thielemann is director of research at Stanford Institute. He was for many years with General

Electric's research department. He developed two of these alloys that are the best alloys in use in the world today while at General Electric. He then went to Allegheny Ludlum.

From there he went to Pratt & Whitney and for 9 years was Pratt & Whitney's chief metallurgist trying to develop the best airplane engine he could. He has been for 10 years a member of the National Advisory Committee for Aeronautics.

Last July he went to Stanford Research. We are fortunate to have a man of his background to work on these problems. He is too modest to tell you that himself.

I want to say it for him.

Mr. LONG. On February 18, 1955, more than a year ago, I went over to the Pentagon and saw Mr. Stevens, who was Secretary of the Army then. I said, "I want to find out if any better weapon has been found, if I am permitted to find out, than the armor-piercing projectile with a tungsten carbide center."

He said, "I will find that out for you."

He assigned Mr. Higgins to the matter. I wrote Mr. Higgins this letter, which I want to put in the record. I got from him this reply which I want to put in the record. This is the highlight:

> The day-to-day purchase of tungsten by us is predicated on our immediate requirements for end items. Any reduction in present demand must be attributed to the current satisfaction of these immediate requirements. Let me assure you that the Army is still using tungsten carbide in its high-velocity armor-piercing ammunition. There are substantial mobilization requirements for this ammunition, but available funds do not permit us to purchase large amounts of it in any one year.

Now, the Army recognizes that the Armor-piercing projectile with a tungsten carbide core is the best weapon to break up concrete implacements or meet armored resistance, but they have not enough money to buy it.

The CHAIRMAN. You referred to some document earlier in your statement there. Do you wish to have that in the record?

Mr. LONG. Yes, sir.

Senator CASE. Mr. Chairman, I have that. I reached over to look at it because I was interested in it as a member of the Committee on Armed Services, that this Department of Defense instruction would be as explicit and limiting as it is.

There is on page 4 another paragraph which I think might be of interest to the committee:

> B. Each military department concerned shall:
> 1. Initiate a program for the achievement of the maximum designated material requirements reduction possible for each model engine.

In other words, there is a very clear directive that each military department shall initiate a program to achieve the maximum reduction possible in the use of these metals or minerals.

There is also a paragraph A which requires that:

> The Assistant Secretary of Defense (applications engineering) shall review progress in the implementation of this directive and maintain the quantitative limits prescribed herein on an up-to-date basis in conformity with changing circumstances of availabilities and requirements in the designated materials.

I do not know that this entire document was being placed in the record, but I thought those two paragraphs at least should be added to the one that Mr. Long presented.

I might say to you, Mr. Chairman, I have made notes of this directive and plan to bring it to the attention of the subcommittee of the Committee on Armed Services which deals with the procurement of defense materials.

Mr. LONG. Mr. Chairman, I would also like to put in the record, if you choose, Tungsten in 1955. That is the Bureau of Mines publication which gives the figures for the year 1955.

The CHAIRMAN. Yes.

Mr. LONG. This is a review of the history of our production from 1944 up to now.

The CHAIRMAN. That will also be printed in the record.

Mr. LONG. I certainly appreciate this opportunity to appear here.

The CHAIRMAN. We are deeply obligated to you.

(The material referred to is as follows:)

The following tabulation shows the domestic production from 1944 to 1955, and domestic production purchased by the Government from 1951 through 1955, and domestic consumption from 1944 to 1955 (in short-ton units of tungsten):

Year	Domestic production	Domestic consumption	Government purchases
1944	618,780	1,214,358	
1945	341,442	806,337	
1946	295,972	409,200	
1947	191,807	494,994	
1948	253,880	560,955	
1949	183,500	314,155	
1950	251,235	318,007	
1951	374,739	722,975	
1952:			
1st quarter			[1] 8,778
2d quarter			[2] 7,623
3d quarter			38,301
4th quarter			27,999
Total	458,306	547,078	82,701
1953:			
1st quarter			50,550
2d quarter			125,791
3d quarter			145,272
4th quarter			194,579
Total	569,699	490,051	517,192
1954:			
1st quarter			181,840
2d quarter			252,847
3d quarter			199,787
4th quarter			194,579
Total	832,340	255,797	860,158
1955:			
1st quarter			217,402
2d quarter			252,575
3d quarter			223,073
4th quarter			226,874
Total	992,839	567,798	919,924
1956:			
1st quarter			275,831
Shipments en route [3]			83,137
			358,968
Cumulative total			2,738,943

[1] Purchases from May 1951 to May 6, 1952, included.
[2] Purchases for May and June 1952.
[3] Not accepted as of Mar. 30, 1956.

[U. S. Bureau of Mines Mineral Market Reports, M. M. S. No. 2484]

TUNGSTEN IN 1955[1]

An increase in domestic production of tungsten concentrates was reported in 1955 for the sixth consecutive year, according to the Bureau of Mines, United States Department of the Interior. From less than 3 million pounds (contained tungsten) in 1949 production has increased each year by an average of more than 2 million pounds. Imports were 2¼ million pounds less than in 1954. Prices were quoted at $33.68 to $35.93, duty paid, at the year's beginning and $40.93 to $42.43 at years end. Domestic tungsten concentrates were purchased by the Government at a base price of $63 per short-ton unit under terms of the domestic tungsten program. General Services Administration announced delivery of 2,379,975 short-ton units of WO_3 as of December 31, 1955. Under the present program, purchase of 3 million units is authorized.

TABLE 1.—*Salient statistics of tungsten ores and concentrates in the United States,[1] 1946–50 (average) and 1951–55, in thousands of pounds of contained tungsten*

Year	Production	Shipments from mines	General imports	Consumption	Industry stocks at end of year		
					Producers	Consumers and dealers	Total
1946–50 (average)	3,718	3,789	8,252	6,936	452	4,334	4,786
1951	5,914	5,973	7,533	11,410	234	4,038	4,272
1952	7,233	7,244	16,985	8,634	208	2,816	3,024
1953	9,259	9,128	29,130	7,734	363	4,335	4,698
1954	[2] 13,136	[2] 13,051	22,949	4,037	[2] 458	3,913	[2] 4,371
1955	15,669	15,551	20,736	8,961	629	3,495	4,124

[1] Includes Alaska. [2] Preliminary figures.

Production and shipments of tungsten concentrates increased 19 percent in 1955 compared with 1954. Output was obtained from several hundred widely scattered operations in 8 States, but 3 States—California, Nevada, and North Carolina—supplied 79 percent of the total. Largest producer was the Pine Creek mine of Union Carbide Nuclear Co. (a division of Union Carbide & Carbon Corp.), near Bishop, Calif. Production during 1955 is estimated to comprise 74 percent scheelite concentrates and 26 percent wolframite-type concentrates.

TABLE 2.—*Tungsten concentrates produced and shipped in the United States, 1954–55, by States*

Country	Produced				Shipped from mines			
	1954		1955		1954		1955	
	Tungsten content (1,000 pounds)	Units	Tungsten content (1,000 pounds)	Units	Tungsten content (1,000 pounds)	Units	Tungsten content (1,000 pounds)	Units
Alaska								
Arizona	57	3,601	77	4,825	57	3,601	77	4,825
California	4,412	278,163	5,338	336,532	4,437	279,748	5,357	337,755
Colorado	886	55,864	1,134	71,472	876	55,243	1,119	70,521
Idaho	448	28,249	576	36,343	431	27,180	591	37,277
Montana	651	41,037			651	41,037		
Nevada	4,053	255,504	4,452	280,684	3,951	249,103	4,343	273,801
North Carolina	2,438	153,721	2,511	158,301	2,456	154,850	2,483	156,536
Utah	187	11,768			187	11,768		
Washington	4	223			4	223		
Other [1]			1,581	99,679			1,581	99,679
Total	13,136	828,130	15,669	987,836	13,050	822,753	15,551	980,394

[1] Includes Montana and Washington which the Bureau is not at liberty to publish.

[1] Prepared by R. W. Holliday and Mary J. Burke (statistics), March 21, 1956, under the supervision of H. G. Iverson, Chief, Branch of Ferrous Metals and Ferroalloys, Division of Minerals.

Consumption of tungsten concentrates, the highest year since 1951, was 8,961,000 pounds, an increase of 122 percent over 1954. Manufacturers of tool steel consumed 15 percent of the tungsten concentrates used in 1955.

General imports of tungsten ore and concentrates in the United States were 20,735,999 pounds (tungsten content) a decrease of 10 percent over 1954. This quantity represents the ore and concentrates received in the United States irrespective of ultimate disposition; 17 percent of these imports entered bonded warehouses. Although concentrates were received from 22 foreign countries in 1955, 9 countries—Bolivia (22 percent), Korea (12 percent), Portugal (9 percent), Canada (9 percent), Australia (8 percent), Brazil (6 percent), Belgian Congo (6 percent), Spain (5 percent), and Peru (5 percent)—supplied 82 percent of the total.

Exports of tungsten ore and concentrates were 67,510 pounds (gross weight)—21,616 pounds to Japan, 19,346 pounds to West Germany, 11,448 pounds to United Kingdom, 11,100 pounds to Netherlands, and 4,000 pounds to Canada.

General imports of ferrotungsten were 625,840 pounds (metal content)—244,807 from Japan, 243,165 pounds from Portugal, 84,077 pounds from United Kingdom, 27,337 pounds from Sweden, and 26,454 pounds from Austria.

Exports of ferrotungsten were 3,318 pounds (gross weight)—all to Canada.

TABLE 3.—*Tungsten ores and concentrates imported into the United States, 1955, by countries*

Country	General imports [1]		Imports for consumption [2]		
	Gross weight (pounds)	Tungsten content (pounds)	Gross weight (pounds)	Tungsten content (pounds)	Value
Argentina	1,669,734	888,255	1,669,734	888,255	$2,548,443
Australia	3,075,499	1,678,583	3,196,074	1,742,678	5,122,129
Belgian Congo	2,058,466	1,162,417	2,007,333	1,132,040	2,988,085
Bolivia	9,363,317	4,601,357	9,363,317	4,601,357	14,875,093
Brazil	2,381,546	1,317,237	2,458,826	1,347,273	3,226,622
British Malaya	236,693	128,268	229,723	127,630	191,916
Burma	609,584	324,391	948,683	527,509	813,010
Canada	3,472,004	1,867,742	3,821,022	2,047,069	7,113,674
Egypt			1,067	550	1,190
Federated Rhodesia and Nyasaland	19,322	10,043	15,322	7,991	14,124
Finland	163,140	89,481	108,355	58,460	96,485
France	386,432	203,921	571,989	306,699	581,843
Germany, West			55,115	31,293	39,440
Hong Kong			21,783	11,905	25,143
Japan	279,276	161,291	300,951	174,407	328,751
Korea, Republic	4,388,900	2,413,434	3,062,038	1,721,799	2,720,531
Mexico	1,689,790	855,129	1,321,133	666,737	1,803,561
Netherlands	33,098	17,780	33,098	17,780	36,021
New Zealand	4,274	2,303	4,274	2,580	3,368
Nigeria			5,130	2,844	6,715
Peru	1,679,499	953,431	1,668,154	947,304	3,107,155
Portugal	3,424,163	1,933,615	3,507,825	2,000,161	4,264,386
Spain	1,996,691	1,050,044	1,941,687	1,024,083	3,228,456
Thailand	1,340,546	741,719	1,643,422	914,973	1,529,756
Union South Africa	609,034	316,515	623,832	328,251	1,268,856
United Kingdom	26,450	19,143	18,734	14,860	29,524
	38,907,458	20,735,999	38,598,621	20,646,488	55,964,277

[1] Comprises ores and concentrates received in the United States; part went into consumption during year, and remainder entered bonded warehouses.

[2] Comprises ores and concentrates withdrawn from bonded warehouses during year (irrespective of time of importation) and receipts during year for consumption.

Source: U. S. Department of Commerce.

DEPARTMENT OF THE ARMY,
OFFICE OF THE ASSISTANT SECRETARY,
Washington, D. C., April 8, 1955.

MR. W. LUNSFORD LONG,
President, the Tungsten Institute,
Washington, D. C.

DEAR MR. LONG: I have completed an inquiry into the procurement of tungsten by the Army as suggested by your letter of February 18, 1955. I find that tungsten is definitely not being designed out of Army end items. Of course the expected availability of the material is one of the factors which must be

considered by us when we design military materiel. This is true in the case of tungsten as well as other materials which can be expected to be short in a general mobilization.

The day-to-day purchase of tungsten by us is predicated on our immediate requirements for end items. Any reduction in present demand must be attributed to the current satisfaction of these immediate requirements. Let me assure you that the Army is still using tungsten carbide in its high velocity armor piercing ammunition. There are substantial mobilization requirements for this ammunition, but available funds do not permit us to purchase large amounts of it in any 1 year.

The Office of Defense Mobilization is responsible for stockage objectives in the national stockpile and the three military departments coordinate their requirements and present them to that agency through the Department of Defense. At the moment the three departments are making a comparison of these requirements against the potential supply of tungsten. I am taking the liberty of sending a copy of your letter of February 18 to the Department of Defense for their information. In this connection, you may desire to get in touch with the Office of Defense Mobilization or the Department of Defense in regard to planned purchases by the Office of Defense Mobilization.

I hope that the above information will answer the questions which you have raised in regard to the use of tungsten by the Army.

Sincerely yours,

FRANK H. HIGGINS,
Assistant Secretary of the Army
(Logistics and Research and Development).

THE TUNGSTEN INSTITUTE,
Washington, D. C., February 18, 1955.

Hon. FRANK H. HIGGINS,
Assistant Secretary of the Army,
Washington, D. C.

MY DEAR MR. HIGGINS: Yesterday afternoon Mr. Welfare of your office called me and asked that I write you the substance of what I said to Secretary Stevens in my talk with him yesterday morning in his office.

I said to Mr. Stevens that the production of tungsten in the United States has steadily increased since the inauguration in 1951 of the Government's price-support program, and that we were now producing more than our apparent normal requirements; that if need be this recordbreaking production of last year could be even further expanded, and that from South Korea and elsewhere in the free world tungsten could be had in considerable quantity. In view of this fact I expressed the hope that tungsten would no longer be designed out by the military or other agencies of the Government; that heretofore the Government had insisted on minimum tungsten and other critical alloy content in the designs of powerplants for piloted aircraft and missiles.

I also said to Mr. Stevens that in the past the domestic tungsten mining industry had been told that very large amounts of tungsten would be continuously needed for ammunition in the form of armor-piercing projectiles but that my understanding now was that such ammunition was not now being manufactured or stockpiled and I was wondering if some really more effective weapon has been devised or whether a supposed scarcity of tungsten had induced the use of alternative ammunition that was no better and maybe not so good.

I expressed the hope that Mr. Stevens would get the proper people in the Army organization to investigate the fact of the increased availability of tungsten and chart their courses in the light of the facts as they exist today.

Thanking you for your interest in the matter and hoping that tungsten will be designed "in" instead of designed "out," I am

Very sincerely yours,

W. LUNSFORD LONG, *President.*

No. 4000.16
July 14, 1955

DEPARTMENT OF DEFENSE INSTRUCTION

Subject: Utilization of cobalt, nickel, chromium, columbium, molybdenum and tungsten in military gas turbine (DD–AE (A) 216).
Reference: Department of Defense Directive No. 4000.4, subject: Department of Defense Critical Materials Conservation Policy, dated May 17, 1955.

I. PURPOSE

The purpose of this instruction is to implement Reference with respect to military aircraft gas turbine engines.

II. CANCELLATION

This instruction supersedes all previous Department of Defense instructions and memoranda concerning the use of subject materials in military aircraft gas turbine engines.

III. DEFINITIONS

For the purposes of this instruction the following definitions are applicable:

(*a*) *Designated materials.*—These consist of cobalt, nickel, chomium, columbium, molybdenum and tungsten. Chromium includes both electrolytic chromium metal and also the chromium content of ferrochrome. Columbium includes combined columbium-tantalum content, with the contained tantalum considered as contained columbium.

(*b*) *Gas turbine engine.*—This term includes turbojet engines, turboprop engines, and any other aircraft gas turbine engines developed for military applications or under military sponsorship. For purposes of section IV–D–1, afterburners will be considered as an integral part of engines on which they are employed.

(*c*) *Thrust.*—Energy output by turbojet engines will be measured in terms of maximum sea level static thrust excluding augmentation by coolant injection.

(*d*) *Gross weight.*—In computing the gross weight of each designated material required per engine, the following considerations will apply: Gross weight is the actual weight in pounds of the critical material contained in the mill products (sheets, bars, forging stock, castings, etc.) required to build one engine or a component thereof. In the case of forgings, use the weight of the bar or billet required to make the forging. In the case of castings, use the weight of the rough casting after removal of gates, sprues, or risers.

(*e*) *Net weight.*—The net weight of each designated material required per engine is the actual or "flyaway" weight of the material in a single engine, with no allowance for spare parts.

(*f*) *Gross-to-net ratio.*—This is the per engine gross weight of each single designated material divided by the per engine net weight of that material. For each material in each engine, a separate gross-to-net figure will be indicated.

(*g*) *Comparable gross-to-net ratio.*—This figure will be computed for each designated material on the basis of each individual manufacturer's current practice. If the manufacturer produces more than one type of engine, the figure will be computed for his largest volume comparable production item. It will consist of the gross weight per engine of each designated material divided by the net weight per engine of each material. These ratios will be used to convert actual net weights of designated materials in developmental engines into probable gross weights required in these engines.

IV. POLICY

(*a*) As aircraft gas turbine engines under mobilization conditions are certain to be of major importance to military operations and will require high percentages of the designated materials, optimum efficiency must be attained in the use of these materials in the manufacture of these engines.

(*b*) In the achievement of materials conservation objectives it is not envisioned that any action be taken which will result in the impairment or reduction in the performance of any engine.

(*c*) In the design of all gas turbine engines, the policies stated in paragraphs A, B, C, and E of section VII, Department of Defense Directive 4000.4 are relevant. These are:

"Establish programs to reduce or eliminate mobilization uses of critical materials."

"Give preference, in selecting among critical materials for military equipment, to alternate critical materials of less scarcity to the maximum extent practicable."

"Give first consideration, in designs and specifications for military equipment, to the necessity for mobilization readiness."

"Establish appropriate safeguards to prevent needless applications of critical materials from becoming established in newly designed equipment."

(*d*) It is therefore the policy of the Department of Defense that the Secretary of each military department concerned shall assume responsibility for assuring that maximum efforts is directed toward attaining optimum efficiency in the use of the designated materials in aircraft gas turbine engines. The military departments shall direct their efforts to attain the following objectives:[1]

1. That, except where performance would be prejudiced, each turbojet engine shall consume for its construction, on a gross weight basis, not more than 13 pounds of cobalt, 63 pounds of nickel, 110 pounds of chromium, 0.35 pound of columbium, 5.5 pounds of molybdenum, and 4.6 pounds of tungsten, for each 1,000 pounds of sea level static thrust delivered by the engine;

2. Specific target limits applicable to turboprop engines will be established at as early a date as is feasible. Pending establishment of turboprop target limits it is essential that the policies stated in paragraph IV–C above the energetically applied;

3. That limits for special engines or engines for special applications may be established as required;

4. That at the earliest practicable point in its development, each new engine is examined to determine the gross quantities of each of the designated materials required per 1,000 pounds of thrust or 1,000 equivalent shaft horsepower for its manufacture, and that specific action is taken to assure that in the further development of such new engines, it will be brought into conformity with the policy set forth above.

V. PROCEDURES

(*a*) Each military department shall report annually to the Assistant Secretary of Defense (Applications Engineering) the following:

1. For each production aircraft gas turbine engine model the using service will report:
   (*a*) Current gross requirement per 1,000 pounds of thrust or 1,000 ESHP for each designated material.
   (*b*) Gross-to-net ratio.
   (*c*) Thrust or equivalent shaft horsepower.
2. For each development engine model the sponsoring service will report—
   (*a*) The current net requirement per 1,000 pounds of thrust or 1,000 ESHP for each designated material.
   (*b*) Comparable gross-to-net ratio.
   (*c*) Thrust or equivalent shaft horsepower.

(*b*) These reports to be submitted as of the last day of September. (This will permit proper review by the Assistant Secretary of Defense (Applications Engineering) to revise these limits at the beginning of each year.)

(*c*) Report control symbol DD–AE(A)216 has been assigned to this request.

VI. ACTION REQUIRED

(*a*) The Assistant Secretary of Defense (Applications Engineering) shall review progress in the implementation of this directive and maintain the quantitative limits prescribed herein on an up-to-date basis in conformity with changing circumstances of availabilities and requirements in the designated materials.

(*b*) Each military department concerned shall—

1. Initiate a program for the achievement of the maximum designated material requirements reduction possible for each model engine.
2. Submit the reports required by this instruction.

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[1] These target figures were supplied by the Office of the Assistant Secretary of Defense (Supply and Logistics) pursuant to the last two paragraphs of DOD Instruction No. 5129.10 dated September 29, 1954.

3. Coordinate its efforts to the extent practicable with those of each other military department in order to establish uniform implementation procedures.

FRANK D. NEWBURY,
Assistant Secretary of Defense
(Applications Engineering).

Mr. REDWINE. Mr. Chairman, Dean Burch, on behalf of Senator Goldwater, who is unavoidably absent this morning, wishes to present some witnesses from Arizona, who will discuss S. 3499, the asbestos bill.

Mr. Burch told me that these witnesses could complete their testimony within 30 minutes.

The CHAIRMAN. Very well.

Mr. BURCH. Mr. Chairman, Senator Goldwater asked me to convey his regrets. He was unable to be here today.

We have as witnesses Indians from Arizona, unlike those that were mentioned, that have minerals and know where they are and would like to develop them. They are here to explore those possibilities.

Mr. Jess Stevens is chairman of the San Carlos Apache Indian Tribal Council.

Clarence Wesley is vice chairman of that council.

Mr. D. W. Jaquays is the head of the Jaquays Mining Corp. and operates the Regal mine and they are accompanied by the tribal attorney, Mr. Royal Marks.

Mr. Stevens.

The CHAIRMAN. You may state your name.

Senator BIBLE. Mr. Chairman, I would like to insert in the record a letter under date of April 19, 1956, from Arthur S. Flemming, concerning S. 3499.

The CHAIRMAN. Without objection, it is so ordered.

(The letter referred to follows:)

EXECUTIVE OFFICE OF THE PRESIDENT,
OFFICE OF DEFENSE MOBILIZATION,
Washington, D. C., April 19, 1956.

Hon. JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
United States Senate, Washington, D. C.

DEAR SENATOR MURRAY: This has further reference to your letter of March 23, requesting our comments on S. 3499, a bill to encourage the discovery, development, and production of nonferrous chrysotile asbestos in the United States, its Territories, and possessions, and for other purposes.

Both the minimum and long-term stockpile objectives for chrysotile asbestos are on hand. In addition, the development of substitutes by industry in cooperation with the Department of Defense, have reduced our defense requirements for chrysotile asbestos. Our dependence on a stockpile for this material has been also reduced because of the discovery of very substantial reserves of specification grade material in a readily accessible source.

The Defense Production Act domestic purchase program initially undertaken during the Korean emergency has produced sufficient quantities of chrysotile asbestos to meet the program objective. However, only a small percentage of such amount meets stockpile specifications.

In view of our very satisfactory defense position in chrysotile asbestos, it is our opinion that there would be no defense justification for enactment of S. 3499.

The Bureau of the Budget states that it has no objection to the submission of this report.

Sincerely yours,

ARTHUR S. FLEMMING, *Director.*

STATEMENT OF JESS STEVENS, CHAIRMAN, SAN CARLOS APACHE INDIAN TRIBE

Mr. STEVENS. My name is Jess Stevens, the chairman of the Apache Tribal Council in the State of Arizona.

The CHAIRMAN. Do you have a prepared statement you wish to read?

Mr. STEVENS. I have a script here that I might read from.

My people, the Apache people, in number are 4,300 Indians, 4,300 American citizens, I might say, in the State of Arizona.

I am here to speak in favor of S. 3499, a bill to encourage the development and production of asbestos in the United States. I cannot claim to be any kind of expert on the defense needs of the United States Government. Neither can I claim to be an expert on the mining of asbestos, or the use of asbestos.

I do claim on one subject that I am an expert. It is the unemployment situation, the terrible situation which is now existing on the Apache Reservation.

The reason why I say I am expert on the unemployment situation is because I live with this problem day in and day out. Many of my people were laid off April 10 because of the shutdowns of the asbestos mines.

With these mines shut down my people become so very desperate in need of employment, not only in need of employment, but it means food and shelter and a roof over their heads.

Many of my good friends seem to think just because we are Indians we get the handout from the Government, which is not true. We operate our own law enforcement, our own welfare program which totals up to the amount for the year of police law enforcement, $49,500.

In all total and welfare, all the overhead expense totals up $66,675 annually.

With many of these unemployment situations existing now we cannot continue to support any more employes in tribal employment because of lack of money.

If we do have these mines continued and stockpile asbestos that means a livelihood for my people. We do not get help from anybody as far as law enforcement is concerned, or welfare.

I am greatly concerned and I am worried because my people are destitute.

What will become of my people if no one helps my Apache Indian people? I many times have lain awake at night thinking of my people; what will become of my people? We need jobs. We need work.

This was the only source of work that we did have on the reservation. Now that they are being closed down we have no other means of survival.

In order for my people to survive and to be able to be aggressive in this modern world, I think we should be given every consideration to be able to survive as American citizens of this country.

Someone is going to have to help us. I am sure if we are given the opportunity we will not be crying on anybody's shoulder for the support of my own people.

I have other speakers here with me. They will speak on other subjects with this same bill. I am speaking on the side of the tribal government as I am the head of the tribe. We have 1,600,000 acres of land which we live on. We do not have any opportunity for jobs other than asbestos.

Now that this is being stopped we are in a deplorable situation. I am filled with hope and encouraged that when I go back to Arizona I will be able to tell my people that we have accomplished something on this trip.

I respectfully urge you, honorable Senators and members of the staff, to please pass this bill, S. 3499.

I thank you.

The CHAIRMAN. Thank you for your statement. You may be sure that you will have our complete sympathy and efforts to try to remedy that situation for you. We are in great sympathy with you.

Mr. STEVENS. Thank you.

Senator MALONE. Perhaps I should ask this question of the next witness. This asbestos you mine passes the specifications for use for some purposes?

Mr. STEVENS. Yes. I might say that the asbestos is used in electrical installations as I understand. I said before that I am not an expert on the use of asbestos.

I do know that the only thing I am interested in is jobs for my people as well as the defense needs of the United States Government.

Senator MALONE. Mr. Chairman, that was just a preliminary question. It emphasizes that there are two points to this whole business. Unfortunately, the national defense side is all that has been emphasized. If we do not have to have a thing for national defense, in the stockpile, there is no harm done in allowing these domestic operations to expire.

But I again emphasize, Mr. Chairman, for the benefit of this record so that anyone who reads it might know what some of us think about it, there is an economic side. There are certain areas where they raise corn, there are certain areas where they raise wheat. There are certain areas where they might mine asbestos and whatever these areas are, the communities, whether Indians or Irish, they get to depend on these.

The community grows up depending upon these operations for employment and that is where the income tax that supports the Government and the tax that support the local governments and the States come from.

So I submit, Mr. Chairman, just for the record, the economic aspect in the long run is just as important as the national defense aspect because if we could arrange some way to import everything we need and wreck our country economically the national defense would be very ineffective.

That is all, Mr. Chairman.

The CHAIRMAN. Who will be the next witness here?

Mr. STEVENS. Mr. Clarence Wesley.

The CHAIRMAN. Will you give your full name and whom you represent?

STATEMENT OF CLARENCE WESLEY, VICE CHAIRMAN, INTERTRIBAL COUNCIL OF WESTERN INDIANS

Mr. WESLEY. My name is Clarence Wesley. I am a member of the San Carlos Apache Tribe. Also a member of the tribal council.

On behalf of the Apache people I would like to say a few words in favor of S. 3499. I have prepared a little statement here which I shall go by.

Mr. Stevens has already indicated to the committee of how individual members of our tribe are suffering terrible hardships as a result of the closing of these asbestos mines.

Now, I would like to tell you of the harm that is being done to the tribe itself and how soon it will cost the Federal Government a lot of money.

On the reservation asbestos mining is carried on under leases issued by the tribal council. These leases provide for a 10-percent royalty to the tribe. From Metah Asbestos Co. alone on the reservation, we received royalty of over $20,000 in 1954, and over $21,000 in 1955.

And about $5,000 a month in 1956.

I have here a letter from Barry Rose, a new operator, stating that if the mines were to start again we would receive a royalty of $25,000 each year. This means that over 10 percent of our tribal income has come and over 20 percent would come, if asbestos mining were to continue.

The tribe must have that money. These are the funds that we used to pay our law and order, our policemen, to take care of our welfare and to continue tribal business operations.

Already these essential services have been cut down to the bone.

If we do not get any more royalties from asbestos we will have to cut them even further.

As a result it will be that the Apaches will go hungry and our system of law and order will completely break down. Eventually if we are not to disappear off the face of this earth the Federal Government will have to come to our rescue.

A cut on social service is not the only way and the closing of the asbestos mine will weaken our tribal government.

On our reservation we operate two tribal stores. Those Apaches who work in the asbestos mine could buy at this store for cash. Without work, though, there is no wage and without which they cannot buy. The stores can and do give credit but not for long, because of unpaid debts that keep mounting at the present rate.

Pretty soon the tribal enterprise will be broke, just as the Indians who used to work in these asbestos mines.

Lastly, I would like to remind you that the Government is supposedly spending millions of dollars to improve economic conditions on Indian reservations. One of these programs, which is still in the talking stage, is a plan to subsidize new industries to locate on reservations.

Another program on which the Indian Bureau will spend $3 million alone next year, is a plan to relocate our people in the cities like Los Angeles and Chicago where they can be able to get jobs.

It costs thousands of dollars to move each family and the people generally do not like to go.

From my personal observation I can tell you that the relocation program is not a complete success, no matter how much money you spend.

On the San Carlos Reservation, though, we already have an industry——

The CHAIRMAN. In connection with that program, do they not have a system of training Indians for jobs in the cities, vocational training?

Mr. WESLEY. That was told to us last week in Los Angeles. That was something new that we heard.

On the San Carlos Reservation, though, we have an industry already, that of asbestos mining, 160 members of our tribes were working in these mines before they were shut down.

It seems to me to be plain commonsense that the Government should try to have those mines reopened instead of trying to move 160 workers and families to cities like Los Angeles and Chicago.

In the long run, I think it would be cheaper for the Government and certainly would be better for the Apache people. Like Mr. Stevens did, I also urge the committee pass this S. 3499.

That concludes my testimony.

The CHAIRMAN. We thank you very much. You may be sure that we will give careful study to your problem. We hope we will be able to pass that bill along with the other measures that we have here for opening the various industries that are involved in this hearing.

Mr. WESLEY. Thank you.

Mr. BURCH. Mr. Jaquays is the next and final witness.

The CHAIRMAN. You may state your full name and organization you represent.

STATEMENT OF D. W. JAQUAYS, PRESIDENT, METATE ASBESTOS, GLOBE, ARIZ.

Mr. JAQUAYS. D. W. Jaquays. I am president of the Jaquays Mining Corp. We are operating the Regal mine.

The CHAIRMAN. You are operating the properties down on this reservation?

Mr. JAQUAYS. No; we are off the reservation, but we employ about 20 Indians.

The asbestos industry, as you have heard, will fold up as of May 1. We have about a week more. That is the last check-in.

Senator BIBLE. Why is that? Why do you fold up in a week? Is it because you have met the program completely?

Mr. JAQUAYS. We have filled the tonnage quota. Some of the operators will keep going on the foreign market.

Senator BIBLE. I am having difficulty hearing you.

Mr. JAQUAYS. Some of the operators will keep going on a limited scale by shipping to a foreign market.

The CHAIRMAN. Shipping abroad?

Mr. JAQUAYS. That is right. Our company has orders right now for material to go to Germany and Japan, that scarce fiber right there, because we cannot sell it in this country.

Senator MALONE. You are now operating under what is known as the Malone-Aspinall Act?

Mr. JAQUAYS. Yes.

Senator MALONE. What you need is an extension of the act, or special treatment?

Mr. JAQUAYS. Yes; we have asked for a 5-year extension under S. 3499, the same conditions as we have been working under.

Senator MALONE. A simple extension of the existing act S. 3876, would satisfy your needs. That is the bill, the Malone-Aspinall Act you have been operating under?

Mr. JAQUAYS. That would be fine.

Senator MALONE. That includes tungsten, manganese, chromite, mica, asbestos, columbium-tatalum, beryl.

Mr. JAQUAYS. We have been getting along very well under that bill.

Senator MALONE. What you need is an additional price over the world price that represents the difference in the cost of living, taxes, and cost of doing business?

Mr. JAQUAYS. What we need is an assured market.

Senator MALONE. What is the world price?

Mr. JAQUAYS. The world price on No. 1 is fourteen hundred to $1,750 a ton.

Senator MALONE. What do you get under this bill?

Mr. JAQUAYS. We are getting fifteen hundred. We are getting an average of the world price.

But the big advantage that we are working under under that bill is that we have an assured market. Most of our operators out there are small ones and they cannot stand the cost of building up, say, a thirty or forty thousand dollar carload of asbestos getting it ready to ship.

If you will check your record on the check-ins in the stockpile, most of those were 1 or 2 tons of fiber coming in from little prospectors. They were able to operate that way because every month they knew they were going to get a check.

Senator BIBLE. How much asbestos was produced in the United States in 1955?

Mr. JAQUAYS. In Arizona?

Senator BIBLE. In the entire United States. Is Arizona the mine producer?

Mr. JAQUAYS. I am not familiar with the figures for the total United States. All I am interested in is Arizona.

Senator BIBLE. How much in Arizona?

Mr. JAQUAYS. Around 500 tons of 1 and 2, and approximately 500 tons of 3.

At the present rate we are producing we are producing at the rate of 1,000 tons of 1 and 2 a year.

Senator MALONE. Will you explain the difference between 1, 2, and 3 grades, for the record.

Mr. JAQUAYS. No. 1 is three-quarters of an inch or longer.

This is an excellent grade of No. 1, but we don't get any more for it if it is 3 or 4 inches long.

As long as it is three-quarters of an inch or more long.

No. 2 is three-eighths to three-quarters.

No. 3 is a quarter to three-eighths.

All of that is spinning fiber.

Senator BIBLE. What type of deposit do you find in asbestos?

Mr. JAQUAYS. The horizontal vein type. Some of them are very spotty. We happen to have a fortunate situation at our mine. We have about 2 years ore blocked out ahead of us now.

Senator MALONE. What is the geology of the area, generally where you find it?

Mr. JAQUAYS. That is lime; solution from the diabase came up through the lime and some inner rising of 15 to 20 feet above the diabase, the asbestos was formed in a horizontal vein.

Senator BIBLE. It is underground mining.

Mr. JAQUAYS. That is right.

Senator BIBLE. How deep is the surface?

Mr. JAQUAYS. We are back a thousand feet.

Senator BIBLE. Tunneling in?

Mr. JAQUAYS. Yes, horizontal tunnels.

Senator MALONE. What is the nature of the deposit, the length or breadth or depth? How do you describe a deposit of asbestos?

Mr. JAQUAYS. The ore body that we have is about 300 feet wide horizontally and so far we have mined over a horizontal length of about 1,800 feet. We are still developing ore.

Senator MALONE. How thick?

Mr. JAQUAYS. That is the horizontal width of it. The thickness of our ore, that is it. We can mine an inch or an inch and a half fiber and break 6 feet of ground to get it.

I always have to revert back to the old gold mining veins where a dollar an inch is in the face. We are getting $15 a ton for No. 1.

If we have 1, we have $1,500 inches and 72 inches of ground broken would give us $20 across the full face. So we can mine that.

Senator BIBLE. What was the expiration date of the program if you had not reached your number of pounds or tons you were supposed to produce?

Mr. JAQUAYS. 1957.

Senator BIBLE. It would have run until July 1, 1957?

Mr. REDWINE. October 1, 1957.

Mr. JAQUAYS. There is another condition in the original bill. It was set up to buy 3 tons of No. 3 for each 1 ton of 1 or 2. We did not check in that 3 tons of 3 for each ton of 1 or 2 that we checked in.

The check-in averages were about 1 for 1. We checked in 1 ton of 3 for each 1 ton of 1 or 2, that was checked in.

The result is on that original bill there are 2,000 tons of No. 3 money laying there yet.

Senator BIBLE. None for No. 1 or No. 2 after a week or 10 days?

Mr. JAQUAYS. We tried to get that transferred to make it available to buy 1 and 2.

Senator BIBLE. I understand, but you have reached your requirements on 1 and 2?

Mr. JAQUAYS. That is right. That automatically cuts off the 3 buying program.

Senator MALONE. What information could you give us for the record on the past production over a reasonable number of years of Arizona, if that is the only area you are familiar with, and the possible production under a situation as established through this Malone-Aspinall Act if it should be continued, what do you hope to mine of the various grades? Could you give us that for the record?

Mr. JAQUAYS. Next year we would probably mine a thousand to fifteen hundred tons. Within 2 or 3 years the production will probably be up to 2,000, 2,500 tons of 1 and 2.

When I speak of tonnages, it is only 1 and 2.

Senator MALONE. Now, is there any end in sight for this mining at the price at which you can pay your expenses and make a reasonable profit? Is there an end in sight to the supply?

Mr. JAQUAYS. No, thank God, we still have the prospectors.

Senator MALONE. Well, you do not have the prospectors when you do not have some principle laid down years ahead.

Mr. JAQUAYS. We must have a market to encourage the prospector to head for the hills.

Senator MALONE. You do not see an end to it if you had a reasonable length of years ahead where the price would be profitable to market?

Mr. JAQUAYS. That is right. We have been up against a sort of negative attitude from the Bureau of Mines in Arizona that there was no asbestos in Arizona.

Senator MALONE. There is no tungsten either. You have heard that story.

Mr. JAQUAYS. Yes. We are sort of disproving that. Everybody was surprised when we came to the OMM meetings that we had produced so much.

Senator MALONE. I would like to ask at this point in the record that our own staff might get from the Bureau of Mines the consumption in the United States of the different grades of asbestos and the total amount produced over several years; however, it is convenient to get it, and the estimated future use of the various grades.

Mr. REDWINE. Yes.

Mr. JAQUAYS. We would like to have that, too.

Mr. REDWINE. Mr. Jaquays, in any extension of the purchase program on asbestos, what is your viewpoint on the provision in 3499 changing the ratio 1 to 1 in the sale of No. 3?

Mr. JAQUAYS. The reason for that was——

Mr. REDWINE. No, I say what is your viewpoint on that. Do you think it is necessary?

Mr. JAQUAYS. We should be able to get rid of our three. The reason we changed that from the 3 to the 1 was that experience showed us that that was about the way it was coming in at the 1-to-1 ratio.

Mr. REDWINE. No. 3 is a usable grade of asbestos.

That is a rather unique piece of asbestos there, is it not, Mr. Jaquays?

Mr. JAQUAYS. That is the best in the world.

Mr. REDWINE. The best in the world?

Mr. JAQUAYS. That is right. There are some harsher grades in Arizona. Some of the fiber that has been bought under the present stockpiling program, some of the manufacturers might turn their noses up at it now, and in buying that fiber, that semiharsh and probably marginal grade of fiber they have enabled us to go ahead and find fiber like I gave Mr. Malone.

Mr. REDWINE. This is iron free?

Mr. JAQUAYS. Yes.

Mr. REDWINE. Very soft?

Mr. JAQUAYS. Yes.

Mr. REDWINE. That is what makes it the best in the world?

Mr. JAQUAYS. That is right.

Mr. REDWINE. This particular type and grade is not found anywhere except in Arizona?

Mr. JAQUAYS. On the North American Continent there is another property, the Caster property in British Columbia. It is not quite as low in iron as ours. The other only source is in Southern Rhodesia.

That is controlled by English money and if they want all of the fiber they take it and we get what is left.

Mr. REDWINE. I don't have anything further. I would like to ask if Mr. Marks wishes to be heard.

STATEMENT OF ROYAL D. MARKS, ATTORNEY FOR SAN CARLOS APACHE INDIAN RESERVATION

Mr. MARKS. One statement, if I might.

I am Royal D. Marks, counsel of the San Carlos Apache Tribe.

Just to implement the statement made and especially the statement of Mr. Jaquays, because of my association with the San Carlos Tribe, I have come to know about this asbestos too, but it is one of our main resources on the reservation.

The reason that this product has begun to be developed in the last 2 or 3 years was brought about by the Korean emergency. During that time there was an embargo placed on their product so they could not sell it anywhere else except to our Government.

It is necessary for electric installation purposes and as stated by Mr. Jaquays, the Arizona district is the only place on our continent here except up in Canada where this product is developed and is found.

It becomes vitally important because of the fact that it cannot be mass-produced. That is why it is a very necessary stockpiling item. It is mostly hand labor.

In time of emergency it is done, 90 percent of it, by Apache Indian labor. They are attracted to higher wage industries in time of emergency and off the reservation; therefore, they don't have the labor market available and can't produce it.

It is a hand labor operation. It cannot be done in open-pit mining. Therefore it is important to continue the stockpiling of the product.

It is in the last 2 years that they have gotten into production. This is one of the mining industries, I believe, where they have not asked for aid. They have carried on their own development work because of getting the money and price they have for their product.

I think it has been brought out that this is very essential to the economy of the San Carlos Apache Indian people.

The CHAIRMAN. Thank you.

Mr. MARKS. Thank you, Mr. Chairman, for the opportunity to appear before the committee.

The CHAIRMAN. We appreciate your testimony.

That will conclude the hearings for this morning. We will recess until 2 o'clock this afternoon.

(Whereupon, at 12:30 p. m., the subcommittee recessed, to reconvene at 2 p. m., same day.)

AFTERNOON SESSION

Senator BIBLE. The committee will come to order.

Mr. REDWINE. Mr. Engelbach, please.

STATEMENT OF M. V. ENGELBACH, MANAGER, GOVERNMENT DEPARTMENT, THE RUBEROID CO., NEW YORK, N. Y.

Senator BIBLE. Would you please make yourself comfortable and identify yourself for the purpose of the record, please.

Mr. ENGELBACH. My name is M. V. Engelbach. I am of the executive staff of the Ruberoid Co., with offices in New York. I would like to apologize to the committee for what no doubt are going to be some of my inadequacies. I had 1 day to acquaint myself at least partially with this situation and get prepared. I am not so well prepared.

Senator BIBLE. It may be understood that you can submit a written statement later on, if you wish to.

Mr. ENGELBACH. If you please, sir, we would like to.

We are concerned with Mr. Goldwater's bill, 3499. Basically, we are very favorable to the bill, but not as it is written. We feel that it is inadequate. We feel that it is somewhat innocently restrictive. We have every sympathy with the previous testimony from the Apache Nation and the Arizona group.

The asbestos industry is somewhat different from the metal mining groups. Nothing in the asbestos mineral itself permits of simplification, if I may use that word such as the metals. If you have a metal of a certain percentage or a certain degree of excellence, that is about it. But there are many types of asbestos, and in the Chrysotile asbestos, there are 31 grades.

We have no association to provide information to the Senate or the Congress as many others do. We are, unfortunately, a very small industry. I have prepared some notes here, and with your permission I will refer to them.

The United States is the largest consumer of asbestos in the world, and we are dangerously dependent on foreign production for almost all of the asbestos we use. If those foreign sources were cut off, and they could be, we would be in real trouble because of our extremely limited production. As an example, Russia produces a lot of asbestos, and after World War II there was a considerable shortage of various types in this country. The Russians came to our company and offered asbestos. But they could not ship it unless we provided them with 50,000 bags to pack it in. We provided them with the 50,0000 bags and we have never even gotten the bags back.

The latest figures available to me are 1953. The United States imports, mainly from Canada, were 702,838 tons of chrysotile asbestos. The domestic production was 54,456. The United States exports were 3,076 tons, which resulted in a domestic shortage of 645,306 tons. The United States consumption requirements are somewhere in the neighborhood of three-quarters of a million tons a year. This will give you some idea of how dependent our national economy, and not only the defense effort, is on asbestos from foreign sources.

For instance, there is no positive guarantee that a generation hence, Canada, which is the source of most asbestos will be as friendly to us as they are today. Nobody can guarantee that.

In 1955, the Ruberoid Co., who is the largest producer of asbestos in the United States, from our one, we call, small mine in Vermont, had to find and mine 803,000 tons of ore to recover only slightly less than 40,000 tons of merchantable chrysotile fiber. That was at a yield

of 5.17 percent. Of this total, only 762 tons of asbestos were of the so-called spinning grades, such as the Arizona gentlemen have been talking about. It had a very low iron content of 2.1 percent. Therefore, in that year, our production of spinning fiber was only 2.3 percent of the total production.

Compare with that slightly different figures, because I can give you 1953 figures, the Canadian production, just across the line in the Province of Quebec, was 911,000 tons of chrysotile, with a more important yield of 8.5 percent per ton. Of that amount, only 7 to 8 percent was group 3 or better, and had any kind of a low iron content. Canada is in a much more favorable position as to labor costs and all operating costs, and taxes, than we are in this country.

It is important to keep in mind that our domestic production is only 6 to 8 percent of our United States requirements, and of that 6 or 8 percent, the Ruberoid Co., in its one little mine in Vermont, produces 90 to 95 percent of the total. And that is all grades. There is a little other production, and without any attempt to disparage Arizona that is small production.

There is still smaller production in North Carolina and reports of deposits around the country, in various States. I have looked into one myself in Wyoming. There are some reports in California, but none has been discovered so far of commercial value.

This bill that we have under consideration, as I have previously said, I think is very limiting. The reason I said that is because, by the wording of the bill, it says nonferrous. It also limits to grades 1 and 2, once in awhile, grade 3. Asbestos must be recovered as nature deposits it.

Senator BIBLE. Right there, in connection with your own operation, are you at the end of the present program?

Mr. ENGELBACH. Are we at the end of the present program? I am sorry, I cannot answer that, because we make no great dependence upon stockpiling for our income from asbestos. It is not a major consideration in our company to get particular immediate financial help from the Government, and, therefore, our interest is not there.

The reason I say it must be recovered as deposited is because all grades come. You cannot just mine grade 1, 2, or 3, but you have to take what is there. In your processing of the ore into fiber, this grade 1, grade 2, and 3, is nothing but the icing of the cake, and not just what might be icing on the sides. As I said, it is maybe 2, 3, or 4 percent of the production. The reason that grades 1, 2 and 3 are required is that those are the spinning grades.

The beautiful samples that Mr. Jacquays had here today are even too long for spinning, because the spinning equipment as used today is not designed for utilizing fiber that is long. You would have to break that good fiber up, and that would be a crime. But we believe it is shortsighted and wrong to consider only what could be called weaving grades as strategic. For instance, those weaving grades in the low iron content, which is a better term, I think, than nonferrous, are necessary for making highly specialized electrical insulations for electronic equipment. The reason the iron content needs to be low is because when asbestos having a low iron content is used, the insulation has a superior dielectric strength. That is all. The rest is for other weaving, for making fabrics of all kinds.

But how can anybody say that that particular type of fiber is the only one that is strategic?

For instance, much lower grade fibers are necessary for making clutchplates, brake bands, even the telephone has to have asbestos shorts in its body, its plastic body.

Which is more strategic in time of war, a field telephone, a walkie-talkie, or a truck that carries the proximity fuse artillery shell to where it can be fired?

Nobody can definitely establish that. Therefore, there should be some consideration given to the maintenance of this industry not only on the cream of what can be produced but on the overall production.

There are several grades of Chrysotile not mentioned in S. 3499 which generally have a high iron content and which, because of their importance to industry and because of their relatively short supply could be called critical now and no doubt under war conditions would be strategic. For instance, in the chemical industry, upon which we are dependent, a wide variety of fibers are necessary for filters, and they are not necessarily grades 1, 2, and 3. But they are just as essential as those grades for those uses. In this GSA stockpiling, I am not sure that I have the latest data, but here in their national stockpiling specification P–3, they use this kind of wording: "A, quality. All material purchased under this specification shall be commercially nonferrous chrysotile asbestos equal to that mined in the southern Rhodesia at the Shebanning mines."

That is no standard.

Further on they say "The soft chrysotile mined in Arizona represents optimum quality, while the harsh type is not acceptable."

Those two statements have to do with Arizona. The final statement is "Canadian chrysotile conforming to the following requirements shall be acceptable provided that it meets the following class specifications," which have to do with the iron content. There is only a left-handed mention of American production in that specification.

Senator BIBLE. That point, because I am simply not clear on the situation, causes me to ask this question: How much of the asbestos used commercially or industrially in this country is domestically produced, percentagewise?

Mr. ENGELBACH. Previously I mentioned that American production is between 6 and 8 percent of our requirements.

Senator BIBLE. You are talking now about industrial and domestic uses?

Mr. ENGELBACH. Yes, sir.

Senator BIBLE. So that the balance of the 94 to 92 percent is imported?

Mr. ENGELBACH. Yes, sir.

Senator BIBLE. I just wanted to have that figure clear in the record. Thank you.

Mr. ENGELBACH. Another thing is that the question of harsh fiber or other than harsh fiber is not always correct. You see, there are so many wide uses for asbestos. You hear a lot of people talk about asbestos cement pipe for carrying water, sewage, and flue gases. In the old days, we used to use cast iron pipe and steel pipe. To conserve metals, there has been a trend toward this asbestos cement pipe, made

of a combination of asbestos fiber and portland cement, which saves metals. Only harsh fibers are good in that. Unfortunately, the best fiber is Amosite, controlled by the British in Africa.

We had a devil of a time getting some Amosite during World War II. Most of the asbestos in the United States of any important quantity is the Chrysotile type. I am going to try to skip through here and not repeat anything that has been said.

Senator BIBLE. It is understood that the full statement can be written into the record.

We do have a great many witnesses.

Mr. REDWINE. That is correct, Senator. We have to shorten these as much as possible to put the story over.

Mr. ENGELBACH. We believe, and not applying to the Ruberoid Co. but applying to this whole industry, if it can be called such, that bill S. 3499 is innocently discriminatory. We believe the word "nonferrous" as used in that bill means nothing. Nonferrous means with a total absence of iron. There is very little asbestos ever found completely without iron.

The proper terminology would be low iron content. It should be specified what is meant by low iron content. If you do not do that, some misguided person or uninformed person, might go off the lot on what is and what is not a proper stockpiling standard, as they did in this one.

In other words, we think the bill ought to be clarified and made more specific. We think the bill is too limiting in that it takes cognizance of only grades 1, 2, and 3. You cannot do that. In order to maintain this industry, if it is going to be maintained, you have to find a market in the utilization for everything that is mined, of necessity. You cannot go along and pick things out. It would be like saying you are going to help the placer gold miners if all the nuggets he gets are going to be a quarter of an inch in diameter. You cannot do that.

Asbestos fiber containing up to 5 percent iron is completely suitable for most uses in time of war that are now called strategic. In S. 3499 on page 2, starting on line 22 is a provision limiting Government purchases of crude No. 3 nonferrous Chrysotile asbestos only when offered with supplies of crudes Nos. 1 and 2. This appears to be highly and unduly discriminatory. That is like having to buy a bottle of wine when you want to buy a bottle of bourbon, and that is clearly against public interest.

There is more required to give this industry some help than just buying crudes 1, 2, and 3.

Senator BIBLE. You propose to do that how, specifically, 1, 2, and 3?

Mr. ENGELBACH. I am right up to that now. We are hampered in our industry here by low yield per ton of ore mined, high costs, and low prices in competition with imports. The industry cannot find the capital for expensive exploration and development of new or improved ore-milling methods without Government help. If our Government can devote a lot of money to foreign aid, we could use a little small money in this industry to help.

Therefore, bill S. 3499 should include provisions for Government help in exploring for, and developing, new and existing deposits of Chrysotile asbestos fiber, and for research to develop new or im-

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proved milling and recovery processes, because by the proper processes you can produce better grades.

I understand that there is or has been a comment from the Bureau of Mines or some subdivision thereof, concerning this bill, substantially to the extent that industry has developed substitutes for low iron content Chrysotile.

Senator BIBLE. Do we have anything submitted to you, Mr. Redwine, along those lines?

Mr. REDWINE. No, sir. I do not believe so.

Mr. ENGELBACH. I do not know what those substitutes are, unless they mean totally different materials.

Senator BIBLE. That might be of interest to the committee. I believe we can make an inquiry along that line.

Mr. ENGELBACH. The next thing he says is that there are very substantial reserves of specified grade Chrysotile. We are the largest producers in this country and do not know where they are.

Senator BIBLE. Who is supposed to have said that? The Bureau of Mines?

Mr. Engelbach. Yes. Mr. Flemming, I think, of ODM.

Senator BIBLE. Yes. I have just been advised that ODM has made a report on the bill to which we are directing our attention at this time, 3499, following their usual pattern.

Mr. ENGELBACH. If I may repeat, Mr. Chairman, and without belaboring the points raised by so many gentlemen in this hearing, if we are going to maintain and develop an asbestos industry in this country, we have to do it on the basis that the whole industry develops. You cannot just pick out one little thing. The industry is sick, so far as it is concerned, as our good friend in the Apache Nation told us. They are in trouble. You cannot help them or anybody else by just picking out grades 1, 2, and 3. You have to take the whole ball of wax as she goes.

Senator BIBLE. I believe I understand the position you are taking. Thank you for your statement.

Do you have any questions, Senator Dworshak?

Senator DWORSHAK. No, Mr. Chairman.

Mr. REDWINE. I would like to have the record show that we have been advised that the Emergency Procurement Service has ceased its stockpile purchases on Chrysotile but has a directive in the making on Amosite.

Mr. ENGELBACH. That will not help American production, gentlemen, because there is no production of Amosite in the United States. That is South Africa.

Senator BIBLE. Thank you very much, Mr. Engelbach, for your valuable testimony.

Mr. EGELBACH. I understand with your permission, sir, I may properly revise this statement in writing and file it with the committee?

Senator BIBLE. That is correct.

Mr. ENGELBACH. How soon must it be in?

Senator BIBLE. We are working on some emergencies here, so I would think within a week would be fine, a week from today.

(Statement referred to follows:)

NEW YORK, N. Y., *April 30, 1956.*

Subject: S. 3499.

Senator JAMES E. MURRAY,
Chairman, Senate Committee on Interior and Insular Affairs,
Senate Office Building, Washington, D. C.

DEAR SENATOR MURRAY: S. 3499 is before your committe for study and disposition.

We were invited to testify in regard to S. 3499 at the Senate committee hearings on April 19 and 20, 1956. We, who produce from 90 to 95 percent of America's production of asbestos, are not in favor of this bill as presently worded because it is, we believe, highly and unnecessarily discriminatory in favor of Arizona, to the exclusion of all other States.

Enclosed is a copy of our written amended statement made at these hearings, which contains background information valuable to you, and specific recommendations for revised wording to make this bill valuable to the country as a whole.

We sincerely hope you will read our statement and that you can support our recommendations.

This is to thank you and all other members of the Senate committee for permitting us to testify at the hearings.

Yours respectfully,

THE RUBEROID CO.
M. V. ENGELBACH,
Manager, Government Department.

NEW YORK, N. Y., *April 27, 1956.*

Subject: S. 3499.

SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Senate Office Building, Washington, D. C.

(Attention Senator James E. Murray, Chairman.)

GENTLEMEN: This is to confirm and extend my oral evidence given before your committee on April 20, 1956.

The mining of asbestos, and the preparation of merchantable fiber from the mined ore, is a complicated and highly specialized business, completely unlike the mining and recovery of any other mineral.

There are no applicable standard mining methods and there are no custom mills or smelters where asbestos ore may be sent for recovery of the fiber. Mining, milling, and the recovery of possible grades of fiber must be done right at, or closely adjacent to, the mine.

Therefore, it is necessary to give your committee a more detailed statement than would be necessary for other minerals, to provide you with an adequate basis for your consideration of S. 3499.

ASBESTOS, GENERAL

Asbestos is the only incombustible mineral fiber on earth. Physically it is a complex combination of elements in crystal form. It's widely varying chemical formula causes its occurrence in many types.

The recovery of metals from their ores can be done with processes involving heat and chemical reactions. But chemical and heat recovery methods cannot be used with asbestos because the natural form of the asbestos fiber must be preserved intact.

The recovery of asbestos fiber from the ore, reducing the recovered asbestos to a properly fiberized condition, and the separation of the fibers into each of the over 30 commercial grades, requires highly specialized milling equipment and highly skilled employees, of which there are only a very few in the United States.

Some of the more well-known forms of asbestos, all of which are essential to our economy and defense, include:

Chrysotile: An anhydrous magnesium silicate.

Amphibole group: These may be called anhydrous magnesium silicates which include amosite, tremolite, crocodilite, and others.

Almost all forms of asbestos may contain varying amounts of iron, either in chemical combination in the crystal or adhering to the fiber crystals. Amosite asbestos may contain up to 40 percent iron oxide. A completely nonferrous asbestos is a great rarity.

All asbestos in the form of fiber, which is the only form in which it can be used, must contain some water of crystallization; otherwise the crystalline fibers would not exist.

CHRYSOTILE

Chrysotile asbestos is the most commercially important type and is essential to our economy and defense. It is the type produced in America, and in only small commercial quantities.

Uses of Chrysotile

Without a continuing supply of chrysotile asbestos fiber of many grades, our economy and defense effort could not exist. Thus, our dependence is not on only one or two grades of Chrysotile of low iron content, but on many grades of Chrysotile and other types of asbestos.

There is no mechanical appliance, machine, vehicle, ship, or airplane on earth that does not require the use of, or benefit from, some type or grade of asbestos fiber, all along their line of production from raw material to the finished product. For a simple example, all resilient mechanical gaskets required to resist a temperature in excess of 350° F. require asbestos as a component.

There is no building or its equipment built today that does not require asbestos in some form.

Even many of the types of plastics from which many things are made—such as telephones, radio, radar, and atomic devices—all require some form of asbestos to reinforce the plastic.

Occurrence of Chrysotile

The major portion of the world supply of Chrysotile asbestos is produced in the Province of Quebec, Canada. Smaller amounts are produced elsewhere, including the United States.

In the United States, commercially developed deposits and production of Chrysotile exist only in the States of Vermont, Arizona, and North Carolina. All other United States deposits and production are insignificant, and cannot be considered deposits of commercial value.

Canadian production

Since 1950 the annual Canadian production of Chrysotile asbestos fiber has ranged from 875,000 tons to over 900,000 tons of finished Chrysotile fiber.

The Canadian deposits of Chrysotile are found in massive asbestos-bearing formation, and are of much greater extent than any known elsewhere in the world, especially in America. The Canadian deposits yield a greater percentage of recovered fiber per ton of ore mined than do the American deposits.

Most of the Canadian deposits are quarrying operations. Canadian wage rates and standards of living are lower than ours. Therefore, the Canadian asbestos industry can produce merchantable Chrysotile fiber at a much lower cost than we can.

For these reasons, Canada can and does dominate the market and set the world price on Chrysotile asbestos fiber. While we are friendly with Canada now, there is no guaranty that such friendship will exist a generation hence.

United States production

There are practically only two known deposits of Chrysotile asbestos in the United States. These occur in Arizona and Vermont. Vermont consistently produces from 90 to 95 percent of the entire United States annual production.

The United States produces only 6 to 8 percent of its annual requirements of Chrysotile asbestos fiber. The remainder must be imported, mainly from Canada and Africa.

The United States is dangerously dependent on foreign production of asbestos.

Arizona.—To be susceptible to economic and commercial and profitable development, especially in competition with foreign production, asbestos must be found in our country in massive formations, containing the right type and grade of asbestos fiber. No such deposit is known to exist in Arizona.

In Arizona Chrysotile asbestos is found only in small and widely separated deposits consisting of relatively thin veins of asbestos-bearing ore—not massive formation. We understand that most of it is found on Apache lands.

These small veins are found only in limited quantity and in widely separated and often remote localities. Their development is limited often to small, and relatively high cost, operations that permit only the especially high grade ore to reach the mill near Globe. It does not pay to transport the lower grade ore to the mill and process it.

Because the Arizona production is limited by high operating costs and high transportation-to-market costs, and even then must meet Canadian low-cost production competition, it is difficult to develop the Arizona deposits to a point where all the fiber is extracted from the ore on a profitable basis.

This situation causes a waste in Arizona of many grades of Chrysotile asbestos fiber that otherwise could be recovered and marketed. These are some of the main reasons why Arizona production, so necessary to the Apache people—and our country—must have Government help—so long as that help is not discriminatory and at the expense of asbestos production elsewhere in America.

The Bureau of Mines statistics on Arizona production are very revealing of the situation. Their statistics of Arizona Chrysotile production—of all grades—report a production in 1923 of a total of only 4 tons.

Improvement in production has been attained. The highest production was in 1941 and totaled 2,574 tons. Production dropped again in 1944. Production of all grades, not only groups 1 and 2, dropped to the small total of 696 tons. We understand the total production of all grades in 1955 was around only 1,000 tons.

North Carolina and other States.—We can find no tabulation of the production in these States. It was evidently commercially insignificant, and not enough to warrant tabulation.

Vermont.—The State of Vermont consistently accounts for approximately 90 to 95 percent of the total United States production of Chrysotile asbestos fiber, and all comes from The Ruberoid Co. mine near Hyde Park, Vt.

In 1955 the Ruberoid Co. had to find and mine 803,000 tons of ore to produce only 39,669 tons of merchantable Chrysotile fiber of all grades. The yield basis was 5.17 percent of the ore mined. Of this total, some 762 tons were of groups 1 and 2, "spinning grade" fiber, which was only 2.3 percent of all the grades of Chrysotile fiber recovered.

In Canada the yield per ton of ore is nearly 60 percent greater than in America, and the labor and mining costs are much lower than in the United States.

It is to be noted that the "iron content" of the Vermont fiber produced in 1955 was extremely low, being only about 2.1 percent, which is less than the maxi-iron content of 3.5 percent permitted for stockpile purchases.

Compare these figures on American production with the latest available (1953) Canadian production figures:

Chrysotile (Canadian production)	tons	911,000
Yield, fiber to ore	percent	8.5
Yield of spinning fiber	percent	7 to 8

(American production, 1953, about 54,000 tons.)

The above data dramatically illustrates the importance to our country's economy and defense effort of this practically only U. S. A. source of commercial quantities of Chrysotile fiber in the State of Vermont.

Also, it dramatically illustrates why any legislation enacted for the development of asbestos mining in the U. S. A. would be both unwise and unjust if Senate bill S. 3499, as finally enacted, did not benefit asbestos production in all States—not in Arizona alone.

United States reserves

The unassailable fact is that there are no specific figures available on any known—blocked out—reserves of Chrysotile fiber in the United States, other than in Arizona and Vermont. At current production, the Vermont deposits could be worked out in not too many years.

In-the-ground reserves and suspected deposits mean nothing until found and developed.

These facts are contrary to recent information we understand was sent your committee by the ODM, wherein it was indicated there are ample reserves of Chrysotile fiber in the U. S. A. We would like to know where they are.

Chrysotile mining, milling, and grades

There is no known means or possibility of mining only certain desirable grades of asbestos, such as groups 1 and 2 fiber, to the exclusion of other grades. What is found in the ground must be mined. Then it must be milled and the various fiber must be separated and recovered according to merchantable grades of fiber. It is obviously impractical, and wasteful of our natural resources, to mine asbestos ore for the recovery of only the highest grades of weaving fiber and dump all other fibers on the waste pile.

Complete recovery of all the fiber in the ore is possible only by an expensive milling and recovery process.

There are 31 commercial and established grades of Chrysotile asbestos, including groups 1 and 2 (spinning fiber), which range from fibers three-fourths inch long and longer, and ranging down to a fiber length of three-eighths inch, and all the other 29 grades of fiber.

It must be remembered that all of these 31 grades of fiber must be mined as they occur and later milled and separated as to grade, and all those 31 grades must be marketed, in spite of foreign competition, to begin to develop a profitable operation and keep it producing from year to year.

We understand that the Arizona production is not milled to produce all the possible grades it includes. The quantity of ore available in Arizona and the cost of shipment to market apparently does not warrant the investment in a mill that can produce the necessary 31 grades of fiber necessary to make a very profitable commercial operation.

Therefore, the Arizona industry is limited profitwise to obtaining a high price for a small amount of high grade fiber. The remaining ore must of necessity be dumped and await the erection of an appropriate expensive mill, if one is ever built.

Foreign competition

The greatest world production of Chrysotile is in the British Commonwealth. Canada is the largest, and British Africa is the next largest foreign producer. In those areas, standards of living and labor and mining and milling costs are much lower than in the U. S. A.

Because of these low costs and higher yields of fiber per ton of ore mined, these foreign sources control the market and the price.

It appears that at any time the foreign prices could be depressed to a point where U. S. A. operators would lose money and have to quit. Then, after only the interval of time required for the U. S. A. mines to go back to nature, the foreign operators could raise the price to "all the traffic would bear" and our country would be completely dependent upon and subject to foreign production, especially in time of war.

United States requirements—production and imports

The United States is the world's largest user of asbestos of all kinds and grades. The following data applies to Chrysotile asbestos only (1953 figures).

	Short tons
Imports (mainly from Canada)	702, 838
United States production (less 3,076 tons exported)	51, 380
United States annual requirements	754, 218

Let's look at it another way, based on the above figures:

Annual requirements	754, 218
United States production	51, 380
United States shortage	702, 838

Critical versus strategic Chrysotile

The terms "critical" and "strategic" are, unfortunately, often very loosely used, especially in regard to asbestos. Under "strategic" the GSA lists only groups 1 and 2 fiber provided it has a low iron content.

In fact, low iron-content asbestos is necessary on only a very limited basis, such as when the Chrysotile is used for highly specialized electrical insulations and filters for certain kinds of chemicals.

Which is more critical or strategic? The electrical insulation in a proximity fused shell or the prime mover which puts the gun in position to fire the shell, or the field telephone which "calls the shots"?

Even asbestos shorts and floats are used in the production of guns, prime movers, airplanes, field telephones, atomic devices, and many more things.

Why does the asbestos weaving fiber (groups 1 and 2) used to make asbestos fabric for fire-fighting clothes for the Air Force have to have a low iron content? The answer is, "It does not." But that fiber, regardless of an iron content, could still be critical, if not strategic, during an emergency, and appropriate amounts should be stockpiled. It does not deteriorate.

Several grades of Chrysotile, much lower on the grade scale than groups 1 and 2, are, in fact, always practically critical because they are normally in short supply. If they were not in short supply, the price would not be so high. And they could become very strategic in time of war, though not considered so in this time of uneasy peace.

Nonferrous

According to the dictionary, the word "nonferrous" means "totally without iron." Therefore, to use the term "nonferrous" in S. 3499 to describe a type of asbestos fiber that, in fact, does contain some iron, is completely unrealistic and wrong.

The correct term is "low iron content" combined with a specific specification of exactly what amount of, and exactly what kinds of, iron will be allowed.

GSA stockpiling

We submit that the GSA stockpiling specifications for Chrysotile asbestos are completely unrealistic, harmful to the American asbestos mining industry, and unnecessarily discriminate against American production in favor of foreign production.

The following is quoted from (GSA) national stockpile specification P–3, Asbestos-Chrysotile.

2. (*a*) *Quality.*—"All material purchased under this specification shall be Chrysotile asbestos equal to that mined in Southern Rhodesia at the Shabanie Mines."

It appears your committee and the American taxpayers are entitled to know why such a restriction is placed on Chrysotile fiber purchased with American tax money. Why was American mine production not used as the standard when, in fact, this specification was, no doubt, intended to promote American production, as well as develop a stockpile?

The obvious inference is that the intent was to sponsor the Shabanie mine, possibly at the expense of American mines.

Then again, the specification requires the asbestos to be "equal to" the Shabanie fiber. Equal in what way? How is the equality to be determined, and by whom?

Further on it says: "Canadian Chrysotile * * * shall be acceptable * * *."

Why won't American Chrysotile fiber with the required characteristics meet the requirements for the GSA stockpile?

It is true that P–3 says in a very mild, back-handed manner that "The 'soft' Chrysotile mined in Arizona represents the optimum quality."

If this last statement is correct, why mention the Shabanie and the Canadian fiber as requirements? And again, why discriminate against specification fiber from any other State in the Union?

Further it says: "While 'nonferrous' (without any iron) fiber is called for, an iron content running from 0.75 percent magnetic iron to 3.50 percent total iron is allowed."

This is contradictory. Such a requirement is patently wrong. Asbestos fiber cannot, at the same time, be specified to be "nonferrous" and then allowed to contain iron.

No further analysis of GSA P–3 seems necessary to unearth the obvious objections to it.

DISCRIMINATION IN BILL S. 3499

We do not believe it is the intent of the Senate to approve, or of Congress to enact, discriminatory legislation.

From a reading of S. 3499, it could be deduced that this bill was intended to include and benefit Chrysotile asbestos in the State of Arizona alone, and discriminate against, and at the tax-charge expense of, the production of asbestos in any other State in the United States of America. And further to discriminate in favor of groups 1 and 2 fiber to the exclusion of all other grades.

On the face of it, there can be no justification for patently discriminatory legislation. But on the other hand, legislation helpful to the American asbestos industry is vitally necessary.

Doubtless the discriminatory wording in S. 3499 was used because of lack of knowledge concerning the production of asbestos in America, and to provide your committee with more facts is why we submit this statement.

But regardless of the reason for its inclusion in the bill, any contained discriminatory wording should be removed.

ADVERSE REPORT ON THIS BILL

We understand that the Office of Defense Minerals has issued an "adverse report" on this bill.

We understand that in this adverse report, it was mentioned that—

1. Industry has developed substitutes for low iron content asbestos.

We don't know what such "substitutes" are. Such a statement should be more specific. However, if it is correct, that is further evidence that this bill should not depend on the term "nonferrous" or "low iron content" asbestos. That is, if this bill is to promote asbestos production in America.

2. The ODM report mentions that there exist "very substantial reserves of * * * Chrysotile" in America.

We, the largest producers of asbestos in America, producing consistently 90 to 95 percent of our country's production, don't know where such reserves are located—and would like very much to know.

The fact is that America produces only between 6 and 8 percent of its annual requirements of asbestos and should produce more to avoid becoming very dangerously dependent on foreign sources of supply of this vitally necessary mineral.

RECOMMENDATIONS FOR REVISION OF S. 3499

1. *Passage.*—We recommend the passage of S. 3499 after it is revised as recommended herein, as follows:

2. *Nonferrous.*—Delete from S. 3499 the word or phrase "nonferrous" wherever it appears.

3. *Iron content.*—The measure of the iron content in asbestos is not by any means a conclusive or final measure of the quality or overall usability of the fiber. Some asbestos having an extremely low iron content because of other of its characteristics, is unusable as an asbestos fiber.

Therefore, a restriction in this bill, limiting its benefits only to Chrysotile fiber having a very low iron content, would be extremely hampering on the overall and vitally necessary development of asbestos mining in America, or anywhere else for that matter. This is because almost all the usable Chrysotile asbestos found in America contains some iron, in some form, either as a constituent or in mixture.

Magnetic iron, often not being a constituent of the fiber, is often removable, to a considerable extent, by specific fiber processing methods.

Therefore, if for reasons establishable and determinable on a scientific basis, types of Chrysotile fiber having a low iron content are necessary, such fiber should be included in this bill in a separate category, and might justly receive somewhat favorable consideration. But, in that event, such low iron content Chrysotile should be correctly designated as "low iron content" and not as "nonferrous," and the quantitative content of iron should be established, as well as its method of determination.

4. *Chrysotile.*—The simple designation of an asbestos fiber as "Chrysotile" is not an adequate description because of the variations in the highly complex chemical nature of asbestos fibers. To make sure this bill covers what can properly be called Chrysotile to meet that category the fiber should be described as containing not less than 12½ percent water of crystallization, when determined by a standard ignition test. To do otherwise would be like accepting as gold any alloy containing gold, other than the well-known fineness requirements that designate acceptable gold.

5. *Tie-in purchases.*—In S. 3499, page 2, starting on line 22, there is a provision limiting Government purchase of crude No. 3 "nonferrous Chrysotile asbestos" only when offered with supplies of crude No. 1 or crude No. 2. This appears to be highly and unduly discriminatory.

It has been quite well established in the civilian economy that tie-in sales and purchases are against public interest, and therefore they have no place in legislation.

This tie-in requirement should be deleted from the bill and provision should be made to permit the purchase of separate grades separately.

6. *Exploration and processing aids.*—There is no way to increase the domestic production of critical and strategic grades, or any other grades, of Chrysotile asbestos other than to greatly increase the overall domestic production of all grades of Chrysotile asbestos.

Because the American asbestos mining industry is hampered by low yield per ton of ore mined, high costs, and low prices in competition with imports, and high taxes, it cannot find the capital for extensive exploration for new deposits and

the development of new or improved ore-milling methods, without Government help.

If our Government can devote billions of dollars to foreign aid that often does not provide tangible beneficial returns, it seems only reasonable that it can devote some relatively "small money" to the urgently needed and vitally necessary development of the domestic production of Chrysotile asbestos.

Therefore, bill S. 3499 should include provisions for Government financial help in exploring for and developing new and existing deposits of Chrysotile asbestos fiber, and for research to develop new or improved milling and recovery processes. This latter is of very great importance to increase the yield per ton from American asbestos ore.

We suggest the budgeting, allocation, and appropriation, from funds in the United States Treasury, of at least $250,000 per year, to be made available in the form of loans repayable from, not to exceed 5 percent royalties on, the recovered asbestos fiber sold. This would greatly assist the development of asbestos production in America.

Just because this amount of development help was available, it would not necessarily always be used. But it could be used if its use was warranted on a reasonable basis.

These remarks are intended to be helpful and not by any means critical. It may be they will open a few new avenues of thought not previously considered. It is sincerely hoped, for the good of our country as a whole, that your committee will take favorable action on our suggestions.

Cordially yours,

THE RUBEROID CO.,
M. V. ENGELBACH,
Manager, Government Department.

P. S.—M. V. Engelbach is a member of the United States Department of the Interior Metals and Minerals Advisory Committees, Asbestos Industry Advisory Committee.

Mr. REDWINE. Mr. Chairman, Mr. Bradley would like to talk on antimony. I understand it will take about 5 minues for him to present his story.

We do have some Congressmen who want to discuss mica, but we planned to get antimony out of the way, Mr. Chairman, if we could.

Senator BIBLE. I know how pressed for time Congressmen are. If there is no objection, we will proceed with Mr. Bradley, since he will be a very brief witness.

Mr. Bradley, we are happy to have you with us today.

STATEMENT OF JAMES P. BRADLEY, VICE PRESIDENT, BRADLEY MINING CO., SAN FRANCISCO, CALIF.

Mr. BRADLEY. Mr. Chairman, and members of the committee: I have a brief statement on the antimony bill, S. 3496.

Senator BIBLE. It may be understood that your statement will be incorporated in full in the record.

Mr. BRADLEY. It will only take a few moments to read it, Mr. Chairman.

Senator BIBLE. You may proceed.

Mr. BRADLEY. My name is James P. Bradley, vice president of Bradley Mining Co., San Francisco, Calif.

I believe the encouragement of domestic antimony production is in the national interest due to the following reasons:

(*a*) Domestic mine production of antimony is negligible. The current rate of production of about 600 tons per year amounts to 5 percent of our annual peacetime requirements of 12,000 tons of primary antimony and is equivalent to only 2 percent of our estimated wartime needs.

(*b*) The national stockpile objectives for antimony are not yet completed.

(*c*) Some of our most important foreign sources of antimony (Africa, Europe, and South America) could be cut off during another war emergency, at a time when greatly expanded supplies would be required.

(*d*) Potential new applications for antimony, now under development, could ultimately require large quantities of antimony. One of these is the use of antimony in plating (as a partial substitute for nickel), and another is the development of the antimony semiconductor compounds (aluminum-antimony and indium-antimony) for use in new types of electronic devices.

I have some information on the semiconductor development which I would like to leave with the committee.

Senator BIBLE. That may be left for the perusal of the committee. We will examine it and see whether it should or should not be incorporated in the record.

Mr. BRADLEY. Forms of antimony to be acquired under the proposed purchase program:

Both metallic antimony and antimony oxide have many important military and essential civilian uses, and it is therefore in the national interest to stimulate the domestic production of antimony in these forms.

Antimony oxide is the form of antimony most urgently needed during wartime, due to the military demands for antimony oxide for the flameproofing of paints, textiles, and plastics.

Effect of the proposed program on the domestic antimony mining industry:

Neither the total quantity (10,000 tons) nor the prices (55 cents per pound for metallic antimony and 50 cents per pound for antimony oxide) are high enough to bring about a full-scale revival of the domestic antimony industry. However, the program would encourage some domestic production and, to that extent, would improve our Nation's mobilization base with respect to primary antimony.

This program would not make possible the resumption of production at the Bradley Mining Co.'s Yellow Pine mine at Stibnite, Idaho, formerly the largest domestic producer.

Senator BIBLE. In that connection, do you have any thoughts as to what the price should be for the metallic and antimony oxide?

Mr. BRADLEY. Yes, sir. In the case of our property, which has been shut down for almost 4 years, we figure we would need a price of 80 cents per pound for antimony oxide, and $1 per pound for antimony metal, and a program to purchase a minimum quantity of 36,000 tons, to extend to the middle of 1962.

Senator BIBLE. The present program as in the bill is 10,000 short tons.

Mr. BRADLEY. Yes. I note that one of the purposes of this bill is to eliminate, where possible, the dependence of the United States on overseas sources of antimony.

I would like to point out that the total purchase program for a 5-year period is equivalent to approximately what we imported last year in this country.

In other words, we imported nearly 10,000 tons in 1955 from overseas sources alone.

Senator BIBLE. How much did we produce in our complete domestic production?

Mr. BRADLEY. Approximately 600 tons.

Senator BIBLE. And we imported 10,000 from overseas sources?

Mr. BRADLEY. Yes.

Senator BIBLE. And we produced 600 tons?

Mr. BRADLEY. Yes.

Senator BIBLE. Is that a fairly standard pattern over the last several years?

Mr. BRADLEY. Yes, over the last several years.

The most important feature here, I believe, is that the wartime requirements go up several times, the peak rate of consumption in World War II being about 40,000 tons per year.

Senator BIBLE. Where did we secure it at that time?

Mr. BRADLEY. At that time we were able to get it from South America, and it is possible that we may have more difficulty during the next war with our overseas supplies.

Senator BIBLE. During the time when we need 40,000 tons per year, how much do the domestic miners contribute toward that?

Mr. BRADLEY. Our property at Stibnite was operating at that time and we produced several thousand per year.

Senator BIBLE. Pardon my interruption. Go ahead, Mr. Bradley.

Mr. BRADLEY. There is one part of this bill that I would like to ask a question on. It is not clear to me.

This 10,000 short-tons of metallic antimony and/or antimony oxide, does that mean 10,000 tons of each or a total of 10,000?

Senator BIBLE. Frankly, I do not know. And's and or's, when used like that, have always baffled me.

I will ask the staff members if it is 10,000 of each.

Mr. REDWINE. It was drafted so that it would be 10,000 of each.

Senator BIBLE. The attempt was to make 10,000 of each, I am advised, and, of course, the language should be clear so that there would be no doubt about it.

Mr. BRADLEY. The 10,000 of each, or the aggregate of 20,000, would be a greater encouragement to the domestic producers.

Senator BIBLE. You were suggesting 36,000 tons on a 7-year program.

Mr. BRADLEY. Well, actually 6 years. My figure there was based on the fact that it would take us a year to get our mine in production.

Senator BIBLE. Thank you, Mr. Bradley.

Do you have anything further to state?

Mr. BRADLEY. No, Mr. Chairman, I believe that covers it.

Senator BIBLE. Senator Dworshak, do you have any questions?

Senator DWORSHAK. Mr. Bradley, S. 3496 would provide a price of 55 cents for metallic antimony and 50 cents per pound for antimony oxide.

Would these prices be adequate to accomplish anything worth while in reactivating the production of antimony in this country?

Mr. BRADLEY. I am not familiar with the cost of other properties. I would know it would not bring out our mine production at Stibnite.

Senator DWORSHAK. Is there any potential production in this country that might be encouraged by these prices?

Mr. BRADLEY. Yes, I believe there are a number of small producers who could produce if they could find market that would extend for a period of several years.

Senator DWORSHAK. Would this involve some processing or refining?

Mr. BRADLEY. Yes. They would have to negotiate a contract with a custom smelter, of which there are few that operate in this country.

Senator DWORSHAK. How many are there?

Mr. BRADLEY. There are a few. There is the National Lead Smelter at Laredo, Tex.

Senator DWORSHAK. Your smelter at Stibnite has been shut down?

Mr. BRADLEY. Yes, sir. It is possible that we could reactivate that, if we see there is an opportunity to negotiate for materials, and resell the product.

Senator DWORSHAK. That would be on the basis of the refining and not the production at Stibnite?

Mr. BRADLEY. That is correct, yes.

Senator BIBLE. Are there any further questions?

If not, thank you very much, Mr. Bradley, for your statement.

Senator DWORSHAK. Mr. Chairman, at this point, may I ask permission to have inserted in the record a statement by Mr. R. D. Leisk, vice president and general manager of Sunshine Mining Co., in Idaho, on the subject of antimony, and in direct reference to S. 3496?

Senator BIBLE. The statement will be inserted at this place in the record.

(Statement referred to follows:)

STATEMENT OF SUNSHINE MINING CO. IN SUPPORT OF S. 3496

The following statement is submitted in response to notice of hearing on minerals to be held April 19 and 20, 1956, before the Subcommittee on Minerals, Materials, and Fuels of the Senate Committee on Interior and Insular Affairs, Senator James E. Murray, chairman.

Antimony is a strategic metal of vital importance in time of war. The United States is deficient in developed reserves of antimony ores. Peacetime requirements of antimony metal and antimony oxide are normally met by imports from Yugoslavia, South Africa, South America, and Mexico. In event that the United States should become involved in any major military action the domestic requirements of antimony would be multiplied many times at a time when much of the foreign production would be cut off and only a relatively small portion of the peacetime requirements would be available at a very high cost per pound.

It is imperative, therefore, that a program be initiated that will both provide an adequate stockpile of antimony and stimulate production of antimony from sources within the United States. Under present conditions, antimony cannot be produced economically from sources within the United States in competition with foreign imports. Sunshine Mining Co. is now the only domestic producer of antimony metal in the United States and this production is of a costly by-product nature that cannot long be continued unless such production can be disposed of at an adequate price.

Sunshine Mining Co., a Washington corporation, operates the Sunshine mine near Kellogg, Idaho. The ore mined is of value primarily for its silver content, but contains small amounts of lead, copper, and antimony. The lead and copper have been recovered as byproducts in the smelting operation but until recent years no satisfactory method was available for recovery of antimony. The total recorded production of the mine to January 1, 1956, was 5,300,000 tons of ore and this is estimated to have contained 40 million pounds of antimony or about 7.5 pounds per ton of ore. Following a period of metallurgical research work early in World War II a process was developed and a plant constructed which removed 70 to 75 percent of the antimony content of the concentrates prior to shipment to the smelter. The antimony was precipitated electrolytically as cathode antimony metal containing about 95 percent antimony. This cathode

antimony was sold to various plants engaged in filling military contracts. By early 1944 it was apparent that the antimony recovery process was not paying its way and the antimony plant was shut down.

The plant was, however, maintained in a standby condition and early in 1953 ws reactivated, incorporating several improvements in the flow sheet. Up to January 1, 1956, the plant had recovered 3,500,000 pounds of antimony in the form of cathode metal of 95 percent purity. However, it was found that metal brokers and consumers would no longer purchase the antimony in cathode form except at heavy discounts from the price of competing foreign imports.

To smelt and refine the cathode antimony into standard ingot form will entail additional capital and operating costs that Sunshine Mining Co. cannot assume in the absence of reasoable long-term assurance that the present inventory and current production can be disposed of at a price that will warrant continued operation of its antimony recovery process.

Our conclusions are as follows:

1. There is no primary antimony producting industry in the United States today and such an industry could not be created overnight in event of war.

2. The passage of S. 3496 would bring out a small amount of domestic production but, more important, would stimulate attempts to discover and develop reserves of the metal within the United States.

3. The prices specified in S. 3496 of 55 cents per pound for the metal and 50 cents per pound for the oxide are the minimum for this purpose. For example, a potential source of antimony is in the tetrahedrite ores which contain a combination of copper and antimony. The ratio in these ores is about 1 pound of antimony to 1.3 pounds of copper. With copper at 50 cents per pound, a comparable price for antimony should be 71 cents per pound.

4. We urge favorable consideration of S. 3496 by the committee.

Senator BIBLE. Senator Bennett is with us this afternoon. He has very heavy commitments, I know.

Senator, we are glad to have you before this Minerals Subcommittee.

Senator BENNETT. Thank you, Mr. Chairman.

STATEMENT OF HON. WALLACE F. BENNETT, UNITED STATES SENATOR FROM THE STATE OF UTAH

Senator BENNETT. Mr. Chairman and gentlemen of the committee, I appreciate the opportunity of appearing before the committee to express my interest in the problem you are studying and my concern about its possible solution.

Since among the metals covered by bills you are considering, tungsten seems to be of most importance in Utah, I shall use this metal as the means of developing my point of view.

Five years ago it was assumed that the United States would never be able to produce the tungsten needed to supply the domestic industry. Under the incentives provided by the present stockpile program, our domestic production of tungsten has reached a point where it is exceeding the domestic demand by 66⅔ percent.

The problem we face has several facets. First, the Government stockpile program, based on a price currently about 50 percent higher than the price available to the consuming industry, has produced enough tungsten so that the stockpile goal has been substantially achieved. Second, under this program all of the domestically produced tungsten has gone into the stockpile and the consuming industries have acquired their supplies from foreign sources, thus setting up a pattern which leaves the domestic industry out.

Our long-range objective should be to support in peacetime a domestic mining industry with a capacity approximately equal to the demands of the domestic consuming industry and with protection of

one kind or another which would open the domestic market to these industries and enable them to compete successfully with foreign producers.

It seems to me that we can proceed on one or more of the following basic programs:

(1) We can ask for another short extension of the present stockpile program, either at the present price or at a reduced price. If we do this, we only postpone the approach to a long-range solution and continue the cost to the Government for the acquisition of stockpile over and above the present estimated goal. If we do this, the problem will be back in our laps again at the end of the short extension.

(2) We can face the problem now and try and work out a program under which the shock of cutting back the domestic industry some 40 percent to the approximate present level of peacetime consumption can be cushioned by some assistance program designed to spread the adjustment over a reasonably extended period of time either by subsidy, by tariff, or by some automatic tariff and quota provision which would operate to raise or lower the protection as the world price goes up or down.

In many ways the problem of these minerals has many similarities with the farm problem, with the added complexity produced by the fact that our domestic surplus of production exists in the face of very large importations of the metal and of our inability to get our cost down to the point where we can move into the world market as exporters.

There is much evidence that our agricultural problem may be of fairly short duration because rapid increase in population will create enough demand to absorb the surpluses. With respect to these metals, it may be that the rapidly developing metallurgy of the rocket age requiring new alloys capable of resisting astronomically high heat will increase the demand for metals like tungsten to a point where our present world and domestic surplus may turn into shortages. In the meantime, we have to face this problem and face it with a minimum of dislocation and destruction to this industry.

I should like to place in the record before I close a telegram I have received from the Salt Lake City Chamber of Commerce expressing their concern in the problem.

Senator BIBLE. Without objection, it may be placed in the record at this point.

(Telegram referred to follows:)

SALT LAKE CITY, UTAH, *April 16, 1956.*

Senator WALLACE F. BENNETT,
Senate Office Building, Washington, D. C.:

Understand hearing on tungsten situation by Minerals Subcommittee of Interior and Insular Affairs will be held April 18 and 19. This problem of vital concern to many of the Intermountain and Western States. We trust you will support some stopgap legislation or regulation for reasonable period pending further study of whole tungsten production problem. Present program expiring in immediate future and discontinuance of American purchases would be chaos to tungsten producers and processors in the West.

GUS P. BACKMAN,
Secretary,
MILES P. ROMNEY,
Chairman,
Mining Committee, Salt Lake City Chamber of Commerce.

Senator BENNETT. I should also like to express my personal interest in the testimony given yesterday by Mr. Ray Sullivan of the Salt Lake Tungsten Refining Co. I believe Mr. Sullivan has given you an accurate picture of the problem as it affects the western producers of this metal.

Again, Mr. Chairman, I express my appreciation for the opportunity of discussing this problem with you.

Senator BIBLE. Thank you, Senator Bennett.

I do want to tell you that Mr. Ray Sullivan did appear before us yesterday and the testimony and suggestions he gave were most helpful. I think every member of this committee joins with you in the hope that we can work out a long-range program.

You are very well aware of the fact that last year, when the strategic minerals program was vetoed, part of the President's message was to the effect that a long-range program would be worked out. We have been hopeful ever since that time, last August or September, that we would have some realistic approach on a long-range basis.

Senator BENNETT. I understand that the representatives of the Department have not yet appeared before this committee in this particular hearing.

Senator BIBLE. That is correct. They are due to appear either Wednesday or Thursday of next week. This is the industrial presentation which is currently being held. We hope from them we can receive some concrete suggestions that we can understand.

Senator BENNETT. In preparation for my appearance today, I tried to find out something about their program. I have an impression that they will have something definite when they come up here. Obviously, it is improper for me to even hint at the results of our discussion this morning.

Senator BIBLE. I appreciate that, Senator Bennett. We certainly do hope they will have something concrete next week.

Thank you very much for your testimony. It will be very helpful to us.

Mr. REDWINE. Mr. Chairman, may we take up mica now, S. 3455. We have at least two Congressmen here who would like to speak on this subject.

Senator BIBLE. We will be very happy to hear from the Congressmen, the gentleman from North Carolina and the Member from South Dakota.

STATEMENT OF HON. CHARLES R. JONAS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NORTH CAROLINA

Representative JONAS. Mr. Chairman. I have been here longer than Congressman Berry, but I would be glad to have him proceed if he wishes.

I had not intended to have much to say, sir, except to tell the committee that I appreciate the opportunity of appearing here and expressing my interest and the interest of people I represent in this bill, S. 3455.

I have introduced a companion bill in the House, and it is now pending before the House committee. Hearings there have been delayed until after this committee finishes its consideration of this bill. My own bill is H. R. 9909.

I have in the room with me several practical mica miners, and a mica processor, and one of the able lawyers who practices law on the side but engages in the mica mining, perhaps as his principal activity.

I do not know how many of these gentlemen the committee would be willing to hear, but they are available.

Senator BIBLE. We will do our best to hear as many of them as possible, Mr. Jonas.

Representative JONAS. I have told them that time is of the essence and you cannot spend all day on mica. We will try to be brief.

There is not any doubt, gentlemen of the committee, about the strategic importance of mica. The Department of the Interior admits that. The Office of Defense Mobilization admits it.

I believe I can quote a statement which appears in ODM release No. 470, which was issued on Thursday, January 19, 1956, which will put that question beyond dispute.

May I read it for the record in case it is not available to you?

Senator BIBLE. Proceed.

Representative JONAS. I will quote from the release:

> An expansion goal for production of domestic facilities to develop and produce substitutes for highly strategic muscovite block and fill mica was announced today by the Office of Defense Mobilization. The capacity being sought under the goal calls for synthetic mica for alternate materials in sufficient quantity to replace 2 million pounds of naturally high-grade mica used annually in strategic applications. Target date for completion of the goal is set for December 31, 1960. High-quality natural mica is thus far the only known material satisfactory for use in essential electronic products, such as tubes and capacitors. It has always been in scarce supply in the United States. Applications for certificates of necessity permitting rapid tax amortization of new facilities must be submitted to ODM by June 30, 1956, to be eligible for consideration. Companies desiring further information regarding this goal should communicate with the Office of Defense Minerals Exploration Administration, Department of the Interior.

It is our feeling that while there may be some reason to develop the synthetic or substitution for mica in the event of an emergency, we ought to expend our efforts first in the development, the exploration and development, of the mica facilities that are already in existence.

We have been producing mica in my district of North Carolina and elsewhere in the Blue Ridge Mountain range in the southeastern part of this country for many, many years. We also produce mica in the northeastern part of the United States, the Southwest and in the Northwest.

It takes a lot of money to explore and develop a mica mine. I sincerely believe that we have not explored all of the possibilities of the development of our domestic mica program.

Mr. McAbee, who is here from Spruce Pine, N. C., had with him a sample of mica that is the equal if not superior to any mica produced anywhere in the world, and which he took out of a mine that he is operating in north Georgia.

It is beautiful mica.

If we had a long-range program upon which the miners could rely, and which would justify their investment of substantial amounts of money, where they were reasonably assured of some price for the mica that would return something on the investment, I am sure we could develop substantially larger quantities of mica than we are now producing in this country.

There has been a feeling that we do not have the mica in this country.

Senator BIBLE. What is your expiration date on the bill itself, Mr. Congressman?

Representative JONAS. June 30, 1957. It is 1 year away. This bill that Senator Scott, Senator Murray, and the others introduced, and my bill in the House, would extend the program until 1961, January 1.

With such an extension of the program, we feel that sufficient incentive would exist to cause these mica miners to make the necessary investments.

If a satisfactory price schedule can be arranged, I have the feeling that we can produce almost all the mica we need in this country. At least, I think we ought to make a desperate effort to do that so that we will not have to rely upon the importation of mica from parts of the world which may be denied to us in the event of an emergency.

Senator BIBLE. Thank you very much, Mr. Congressman.

Mr. REDWINE. Congressman, mica mining is practically the backbone of the economy of certain sections of western North Carolina, is that true?

Representative JONAS. I would say mica constitutes the basis for the economy in two counties in my district. They are entirely dependent upon it, and they have been producing mica for many, many years before we ever thought of a critical list of materials.

It is not confined to my district. Mica exists throughout the western part of North Carolina, all up and down the Blue Ridge Mountains and the Appalachian chain. We are continually discovering new sources of mica, but the problem of spending the money to go in there and do the necessary exploration work and the development work depends on the length of the program, as to whether there will be reasonable opportunity.

Senator BIBLE. Where does the mica you produce in North Carolina go now? Does it go exclusively into the stockpile or does some of it go into domestic uses?

Representative JONAS. Both.

Senator BIBLE. Thank you.

You may proceed, Congressman Berry.

STATEMENT OF HON. E. Y. BERRY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF SOUTH DAKOTA

Representative BERRY. Mr. Chairman, and gentlemen of the committee, it would be very difficult for me to add too much to the very fine statement that Congressman Jonas has just given. He has covered pretty much the whole field.

My interest, as you know, in this mica program is because of the large mica deposits in the Black Hills of South Dakota and throughout the Northwest, as far as that is concerned.

I should add that I attended a meeting of the mica miners held at Custer about 2 weeks ago Monday, at which time we talked about the advisability of this bill extending for a 5-year period.

There was some thought that possibly if the stockpile was in the shape that it is, namely, about one-third full, and about three-fourths of the time already gone, that it might be some inducement for ODM or GSA to speed up the program if it were not extended.

On the other hand, however, most of the miners feel reluctant, as Congressman Jonas has said, to make these investments that are necessary in their mines if it is only for a year more, when they have no idea what is going to happen.

Most of them felt that the extension of the bill would give them enough assurance that they could go ahead then and the investments in their mines with the promise that a new program, a new buying program, is being worked out and is being instituted and will be in effect prior to the 14th of May.

I think that the buying program is probably the thing that has stopped or slowed down, I should say, the bringing in of sufficient amounts of money.

The program has been changed very little, the price has been changed none, the grading has not been changed since the beginning of World War II.

The result was that the miners could not get enough out of their mica to pay them, and the grading process was not satisfactory.

In my country, at least, there has been very little mica mined recently. But I think under the new program, this new buying program, that is mica is going to come in.

I urge that this bill be enacted.

I have two witnesses here from South Dakota, one of which you have heard previously.

Senator BIBLE. We heard Mr. Bland yesterday.

Representative BERRY. Mr. McDermand is also here, Mr. Chairman. Both of these gentlemen are very well versed on mica mining. I hope you will have an opportunity to hear them.

Senator BIBLE. We will be very happy to hear them, Mr. Congressman.

Representative JONAS. Would you permit me to say one further word?

Senator BIBLE. Yes.

Representative JONAS. There is one point that I failed to mention, but which I think is very significant and which should be worthy of the consideration of the committee.

I am not a miner and I do not know anything about the technicalities of cutting and trimming mica. But I have been assured by those who are familiar with it that it is a highly technical process. Mica miners are not made overnight. It takes long training and wide experience.

If we once do something that would retard the development of our domestic mica program, if the need ever existed for us to go back into that field, we will not have the trained mica people, and we will waste a lot of time training new people from the beginning.

Senator BIBLE. I think that is a very valuable point, Congressman Jonas.

Representative JONAS. I think that is a very important thing to keep in mind.

Senator BIBLE. That thread runs through all of this mining program, because you do have trained personnel.

Mr. REDWINE. Congressman Jonas, is it true that the biggest cost factor in the mica production is the splitting?

Representative JONAS. That is right.

Mr. REDWINE. And that is all hand labor?

Representative JONAS. Yes.

Mr. REDWINE. You have to compete with cheap foreign labor in that process, do you?

Representative JONAS. That is correct. And plus the fact, as you know, that the minimum wage has been increased now.

As Congressman Berry says, there has not been any change in the price since the program began. The cost of labor has materially advanced. The cost of machinery has advanced. Dynamite has advanced. Everything has advanced except the returns from mica.

Mr. REDWINE. Congressman, I think I heard you say one day that back in World War II most of our mica at that time came from India, and it was very close to where the Japs reached.

Representative JONAS. That is correct.

Mr. REDWINE. That is a rather undependable supply.

Representative JONAS. This is correct. That is the point I referred to briefly in my opening statement. I do not think we should, for our own self interest, put ourselves in a position where we are dependent upon a source of such a critical material in an area which may not be available to us.

Senator BIBLE. Is there a duty on the importation of mica?

Representative JONAS. There is, but it is not a very high one. I believe it is around 11 percent. There is a duty, and I think it is roughly 11 percent.

Mr. REDWINE. Congressman, I think you also commented on the fact that the mica we got from Brazil during World War II was very low grade.

Representative JONAS. I think we can demonstrate that. There is an argument about it. Some of the people who use that mica say it is not as good as the mica we get abroad. But the people who produce it deny that. We can show them some mighty fine mica that compares favorably with the best mica we get abroad. I saw this beautiful piece of mica there that Mr. McAbee had with him yesterday that even in our country is worth $70 a pound.

Mr. REDWINE. You cannot fly planes without mica in them.

Representative JONAS. Everything that has electronics about them uses mica.

Senator BIBLE. Thank you very much, Congressman.

We will be calling the mica witnesses now.

Mr. REDWINE. The next witness, Mr. Chairman, is Mr. Bland. He will be touching on columbium and tantalum, too.

Senator BIBLE. Mr. Bland, we are glad to have you with us again today. For the purpose of the record, you are George C. Bland, chairman of the Black Hills Mica Producers Association at Custer, S. Dak.

FURTHER STATEMENT OF GEORGE C. BLAND, CHAIRMAN, BLACK HILLS MICA PRODUCERS ASSOCIATION, CUSTER, S. DAK.

Senator BIBLE. You testified yesterday, Mr. Bland, but today would you tell us in your own way what your mica problem is?

Mr. BLAND. We have an industry out there which goes by leaps and bounds, or spurts, whatever you want to say. You get a program

that looks pretty good to you, and when you go out and try to mine, you find out that it will not work or it is changed.

People are very disillusioned. They have tried this 4 or 5 times. Today it is a dead industry out there. We have maybe 1 or 2 mines, out of a possible 100, probably, which are in operation.

Senator BIBLE. How many do you have actually operating in the Black Hills Mica Producers Association operations?

Mr. BLAND. I would say probably 1 or 2. We have some mica as a byproduct of columbium-tantalum and berylium. Very small production comes from that source. A year or two ago we had 15, 20 and as high as 30 in operation. The people were led to believe that their mica was good in the beginning.

They went out and invested their money, which was not a large amount of money as you would know it, but as to their concern it is a tremendous amount.

Senator BIBLE. It was probably a large amount of money as I know it.

Mr. BLAND. Well, I mean a couple of thousand dollars to a person there compared to $10,000 or $15,000 as to the mining companies looking at it. They are individuals and not companies.

Senator BIBLE. I understand.

Mr. BLAND. They were encouraged to go ahead. The Government buyers and inspectors would look at the mica and tell them it was very good, and for them to go ahead and mine it and bring it in, that they would pay good prices for it.

They would go ahead for 2 or 3 months and when they brought their mica, they were offered a pittance for it. Where they should have had $3,000 or $4,000 for a ton of mica, by the representations of the Government officials, they got $100 or $200. It left them bitter.

Senator BIBLE. The purchasing agents in GSA?

Mr. BLAND. That is correct, sir.

Senator BIBLE. What is your recommendation as to the bill that we have before us?

Mr. BLAND. Well, there is a standard in existence in the American Society for Testing Materials, on mica. They have a pamphlet that lays down what the requirements for the different grades are. There are approximately 10 grades of which about 8 are of national stockpile character.

We would like to see the American Society of Testing Materials specifications followed more exactly than they have been.

I have testimony here of our contractor, a man who works for the General Services Administration, in which he says that he is not allowed to process mica according to these standards. Yet in this regulation put out by General Services, it is told to us that they will actually follow that regulation in just so many words. I have it outlined here.

Senator BIBLE. I think that is something that the members of the staff might very well go into and make some inquiry and see if they can not be of some help to you along that general line. Of course, that is a little different problem than the problem we have before the committee in the consideration of Senate bill 3455.

I think we can request our committee to be of help to you people in seeing if they can work out this difference in the requirements and specifications as laid down by the regulations and as administered.

Mr. BLAND. They are at the present time drawing up new regulations to take into account the fact of the increased costs in mining since the program started. They say it is a very favorable bill to us. This is said by General Services. They tell us they cannot change the regulations which are in existence, but they can add to them, because of Public Law 206 tying them down to what they had done during the first 3 years of the program.

We were advised that we would be allowed to come in and sit down and help go over these new regulations. It turned out we were not allowed to, and to date we do not know what they are. We would be happy to look at them, and in a few minutes I think we could tell them if it would work for them. Mr. Flotey of General Services is presently reading it over for his approval.

Senator BIBLE. We will see if the committee staff can be of help to you, Mr. Bland.

Do you have any direct testimony to give on Senate bill 3455?

Mr. BLAND. We highly approve of extending the program. It would give encouragement, provided the new regulations will give us something we can operate under. It will give us encouragement to go ahead and invest money. A large number of our mines are becoming deep mines. They require considerable timbering and unwatering. They have been allowed to deteriorate because of the situation in about the last 9 months. We have been completely out of production with the exception of 1 or 2 mines.

Further, we would like to see the limits of the stockpile increased, to give us additional security in knowing that we will be able to operate for a number of years, not just 1 year.

Senator BIBLE. What you are saying is that you have to have some long-range program to make it possible for you to develop your mica resources.

Mr. BLAND. Yes, sir.

Senator BIBLE. Thank you, Mr. Bland.

Senator Malone, do you have any questions to ask Mr. Bland?

Senator MALONE. Yes, Mr. Chairman.

I am sorry I did not hear all of your statement, Mr. Bland. You are from South Dakota?

Mr. BLAND. Yes, sir.

Senator MALONE. What are the minerals you are interested in, chiefly?

Mr. BLAND. I have been interested in berylium and columbium-tantalum as well as mica.

Senator MALONE. Are you actually producing columbium-tantalum?

Mr. BLAND. Yes, sir; I am. It is not a very large amount, as they talk about 20 million pounds. The production from the Black Hills area would probably be maybe 100,000 pounds or something like that in a year's time if it were stimulated, if we have assurances that we could go ahead and operate.

Senator MALONE. I am pretty certain from the tone of your testimony what your answer will be to my next question, but tell me how you conduct a mining operation. Can you do it on an uncertain market, or do you have to have some kind of a principle that, regardless of what is is, assures you of a price where you can pay the help,

the taxes, and stay in business over some particular period, where you can amortize your investment and have a reasonable assurance of making some money?

What do you have to have to operate?

Mr. BLAND. The mica business has to have some support of some kind.

Senator MALONE. Is there any of the critical minerals business that does not have to have support, simply to make up the difference in the cost of wages and the cost of doing business here and the chief competitive country? Is it all alike?

Mr. BLAND. It is all alike.

Senator MALONE. That is what I would like to have you tell us.

Mr. BLAND. Apparently in India, the wages on mica mining are something like 15 or 20 cents a day in our money. We have to pay $2 or $2.25 an hour for our skilled labor. Pretty much all of our employment is skilled personnel. For underground mining, you have to have people whom you can depend on, and if they say something you have to know you can believe it. You do not want the thing left to your imagination. These people require above $2 an hour to make that possible.

Senator MALONE. Let me ask you this question: Do these producers in foreign nations have access to our machinery and know-how in the mining business?

Mr. BLAND. I am not very informed on that, I wish I were, but apparently they have some machinery. I think a large share, from what I can find out, are financed by people from other countries, investors, and maybe possibly from this country.

Senator MALONE. And much of it is financed by our taxpayers through the ECA, the Marshall plan, FOA, or ITC, or whatever it happens to be next year. They change the name every year so that you cannot quite catch up with it in South Dakota.

Mr. BLAND. Yes, sir.

Senator MALONE. In answer to this line of questioning, so that I can have the record clear—and some of us have been with this for a long time—if you are going to mine tungsten, mica, manganese, or any one of the critical materials, with the world price and low-cost labor, our machinery and know-how, does that put you out of business almost immediately unless you have that difference in wages, taxes, and cost of doing business here, comparing that to the chief competitive country, unless it is reflected in your price?

Mr. BLAND. That is very true.

Senator MALONE. There are only two ways that we have developed for that to be done here. One is by setting a price over a long period of years so that you can amortize it over a long period of years, if you are lucky enough to get into the ore, and set a price by law. The other is to set a principle which we had for a century and a half, which is to set up a tariff which would standardize the difference in cost between this country and the chief competitive country.

Is that true?

Mr. BLAND. That is my knowledge of it; yes.

Senator MALONE. I think that is all, Mr. Chairman.

The problem is the same as in other mining areas.

Senator BIBLE. It follows pretty well, Senator Malone.

Senator Dworshak, do you have any questions?

Senator DWORSHAK. No, Mr. Chairman.

Senator BIBLE. Are there any other questions?

If not, thank you very much.

Mr. REDWINE. The next witness is Mr. Sam Phillips.

STATEMENT OF SAM PHILLIPS, PRESIDENT, DOMESTIC MICA MINERS ASSOCIATION, SPRUCE PINE, N. C.

Mr. REDWINE. Mr. Phillips, I believe you have discussed with your group that 1 or 2 of you are going to be spokesmen for the entire group; is that correct?

Mr. PHILLIPS. Yes, sir.

Mr. REDWINE. Thank you.

Mr. PHILLIPS. My name is Sam Phillips, Mr. Chairman, and I represent the Domestic Mica Miners Association of the Southeastern part of the United States, headquarters in Spruce Pine, N. C.

Senator MALONE. What do you represent?

Mr. PHILLIPS. The domestic mica miners.

Representative JONAS. Mr. Phillips comes from my district and he is talking about the same area as I discussed.

Senator BIBLE. We are very happy to have you with us.

Mr. PHILLIPS. There are at least 3,500 people that will be directly involved in this bill. Since the beginning of this domestic purchase program in 1952, the people in the eastern part of the United States have explored over 2,000 prospects in mining, mines looking for mica. In the 5 years preceding 1952, there was approximately $50,000 worth of sheet mica produced in the United States annually, and over half of that $50,000 worth of mica that was produced annually was produced as a byproduct of feldspar.

When this present mica-purchase program expires, all the mines of the United States so far as mica is concerned, will be closed.

Mica is produced in North Carolina, South Carolina, Georgia, Alabama, Virginia, Connecticut, New Hampshire, Maine, South Dakota, Idaho, and New Mexico.

Senator BIBLE. May I interrupt you there, Mr. Phillips?

Do I understand you to say there are 3,500 people employed in those States in your industry?

Mr. PHILLIPS. No, sir. There are at least 3,500 people that are employed in the New England States and the Southern States.

Senator BIBLE. That figure is just for those areas alone?

Mr. PHILLIPS. Yes.

Senator BIBLE. What would the figure be for the entire United States?

Mr. PHILLIPS. I imagine it would be 200 to 300 more. Maybe it is 4,000.

Senator MALONE. And what are you operating under now? What legislation are you operating under?

Mr. PHILLIPS. We are operating under the domestic mica purchase program that was brought into effect by the General Services Administration in 1952.

Senator BIBLE. The Malone-Aspinall law is what he is operating under, I believe.

Senator MALONE. That act was 1953, the act which really established the minimum price they would pay.

Mr. PHILLIPS. Yes, sir.

Senator MALONE. If this act was allowed to expire, it does not expire until 1958. Why would you shut down before that? Have you furnished the amount of mica called for?

Mr. PHILLIPS. No, sir. That was the next point I wanted to bring up.

Senator MALONE. Go ahead. I am sorry.

Mr. PHILLIPS. This bill, S. 3455, the only thing that we are asking for is the extension of the period of time. The present program is to expire on June 30, 1957. We are asking that the extension be put over until June 30, 1961.

Senator MALONE. The bill that extends that act is S. 2876.

Senator BIBLE. That extends the Malone-Aspinall Act, and, of course, this other one extends it just on a case-by-case basis. But an extension of the Malone-Aspinall Act would accomplish the same thing that you are asking for under the other act. Is that a fair statement?

Mr. PHILLIPS. I think so.

Senator BIBLE. Proceed.

Mr. PHILLIPS. The quota that the Government wanted to purchase was the equivalent of 25,000 tons. Today they have purchased approximately one-third of that amount.

Seneator BIBLE. They have purchased one-third over how long?

Mr. PHILLIPS. Four years.

Senator BIBLE. Then it has taken them 4 years to purchase one-third of 25,000 tons?

Mr. PHILLIPS. Yes.

And the Government at that time appropriated $25 million for the purchase of this mica, and they have spent to date about one-third of that amount of money.

We are not trying to support this bill for money. We do want the time moved over a little bit more.

Senator BIBLE. You think it will take you to 1961 to get the full 25,000 tons?

Mr. PHILLIPS. Absolutely. The extension of the time now would stimulate, in our opinion, the additional exploration because the miner would have more time within which to seek the return of his investment.

Actually, what we are trying to show here is that it is a very slow process involved in taking the mica out of the ground. The Government estimated we could take out the 25,000 tons in 3 years, and, actually, we have just taken one-third in 4 years.

Senator BIBLE. In that connection, do we have any report from OMM or ODM concerning the defense requirements on the mica program?

Mr. REDWINE. No, sir.

Senator BIBLE. That has not come up yet?

Mr. REDWINE. That has not come up.

Senator BIBLE. You may proceed.

Mr. PHILLIPS. Mica is used for the strategic purposes, of course, in many things, but two or three of them are jet engines, radar, and fire-control instruments.

We have the information and we think it is true that for certain types of mica used in jet engines, there is about enough mica in the stockpile to last approximately 6 weeks in the case of an emergency.

There is no substitute for mica at this time. The Defense Department has never been able to design around the use of mica for strategic purposes. The Government has spent and is spending now a tremendous amount of money trying to find out some way to come up with a substitute. So far they have been unsuccessful.

It is my opinion that there are two reasons why this domestic program came into being in the first place. The first one is to get mica of strategic quality in the national stockpile to make the United States secure in the case of an emergency. The other reason, in my opinion, is to preserve and expand the art of mining and processing mica. All of this mica has to be processed by hand. The Government has tried to find a machine or design a machine that could process this. It is an art just the same as making Swiss watches.

Senator BIBLE. May I ask you how long it takes to train a man to be skilled in that particular type of work, bearing out what your Congressman, Mr. Jonas, was saying as to the loss of skilled men if you close this particular industry down?

Mr. PHILLIPS. In the mining part of it, you can make a miner in 2 or 3 years. But in the process of the mica, that is a highly skilled operation. It has to be done by your hands, and visual inspection. If you can train young girls—and certainly in our section of the country where we have had mica all of our lives and worked in mica over different periods of time—a lot of this mica is trimmed and processed for the market in the homes.

People just come up with it as children working it.

I would say it would take from 3 to 5 years to have anyone that would know what they were doing in processing it.

Senator BIBLE. Thank you.

Mr. PHILLIPS. We think if this program can be extended, and we can continue to operate, in case we do have an all-out emergency, we can use this nucleous of an industry to expand.

There are two programs that the Government is operating under now seeking to get mica. One is a foreign program and a domestic purchase program. We get our foreign mica from two principal sources, India and Brazil. The foreign program, to date, has not been as successful as the Government had originally anticipated.

India is not sending us as much mica as we need at this time. If we should have an emergency, we could easily be cut off from India by China, and I do not think we should rule out the possibility that India might turn Communist, therefore cutting us off of that source of supply.

The other place that we get mica is from Brazil. We have not been getting the mica from Brazil in the quantities that the Government anticipated, even though there has been a 20-percent increase in price to the producers of Brazilian mica in the last few months.

Mr. REDWINE. Has there been a like increase to the domestic producer, Mr. Phillips?

Mr. PHILLIPS. No, sir. In the last war, talking about the price of mica and what it might cost us from foreign sources as compared with domestic sources, I understand that we asked Brazil if they would send us some mica.

They said, "Yes, we will send you a little mica and a few other things. But first of all, we would like you to patrol our coastline 24 hours a day for the duration, and build us some airstrips down here for our own protection."

So it is kind of hard to arrive at the price we are actually paying for the material.

The best mine that is in operation pays Federal, State, county, and local taxes, and each of its workers pay, in addition, an income tax on his own individual income by virtue of being employed in that mine.

Furthermore, the company buys supplies, and every man employed spends most of his wages in the community for food, clothing, rents and so forth.

But any money we spend for this mica from foreign sources, of course, never returns anything.

We are recommending that the Government take every step possible to get any and all mica it can from any source it can get it.

The only thing which we are asking in supporting this bill is to give us an extension of time. We do not need your money and we do not need you to increase the quota, necessarily. If we can get the time extended, we will produce the mica for this country.

Senator BIBLE. Thank you very much, Mr. Phillips.

Senator Malone, do you care to ask any questions?

Senator MALONE. Yes, Mr. Chairman.

Have you submitted any figures to the committee which show how much we have produced over the last period of years, a reasonable period of years, and maybe during World War II and subsequent to that time, in the United States?

Mr. PHILLIPS. No, sir, I have not.

We have with us, and he is the next witness, I think, who is going to testify, a man who was with the War Production Board. I believe he will have them.

Senator MALONE. And also, I would like to have the figures on how much we have used over the United States.

Mr. PHILLIPS. I believe he will have that.

Senator MALONE. Are there different grades of mica?

Mr. PHILLIPS. Yes, sir. There are many grades of mica.

Senator MALONE. Are you submitting some evidence or is he submitting some that would let the committee, and anyone reading the transcript, have some good idea of what the situation is as far as the grades and the use of the various grades is concerned?

Mr. PHILLIPS. We can do that. We will submit that to the committee.

Senator MALONE. If you will, I will appreciate it.

Could you do that right away so that it will appear in the transcript?

Mr. PHILLIPS. Yes, sir.

Senator MALONE. Has there been any progress made in synthetic mica?

Mr. PHILLIPS. Mr. Montague can tell you more about that than I can.

Senator MALONE. I think you have made a good witness.

Senator BIBLE. Senator Dworshak.

Senator DWORSHAK. No questions.

Senator BIBLE. Thank you a lot, Mr. Phillips.

Mr. REDWINE. Will you give us your name and present position?

STATEMENT OF SIDNEY MONTAGUE, PRESIDENT, MICA FABRICATORS ASSOCIATION

Mr. MONTAGUE. My name is S. A. Montague, the owner and operator of the Spruce Mine Mica Co. in North Carolina.

I am president of the Mica Fabricators Association.

During World War II, or the major part of it, I was chief of the mica section of the War Production Board. I am not in the mica mining business and I own no mica deposits.

Mr. REDWINE. May I ask a question at this point?

Mr. MONTAGUE. Yes, sir.

Mr. REDWINE. Mr. Montague, what percentage of the domestically produced mica meets stockpiling specifications? Are you familiar with that?

Mr. MONTAGUE. That is a hard question to answer. I believe mica in World War II, we obtained approximately 15 percent of our requirements from domestic sources, in the strategic grades.

Mr. REDWINE. What I am trying to get at is what percentage of this mica the Government is buying under the domestic program meets stockpiling specifications?

Mr. MONTAGUE. I believe about 90 percent of it. I believe what they are buying only 10 percent is below the strategic classification.

Mr. REDWINE. Thank you.

Mr. MONTAGUE. In connection with the general subject of domestic versus imported mica, I can say that during World War II a larger percentage of the domestic mica purchased by the Government was allocated than the foreign mica purchased. That indicates that the domestic mica did find acceptance.

There is not a great deal I can say in addition to the very able coverage of Mr. Jonas and Mr. Phillips.

I can reinforce a few of their remarks. I am in favor of this bill because of the strategic power of mica.

Senator BIBLE. Likewise bear out their statement that actually what you need is an extension of time because you have only produced about one-third of the 25,000 tons.

Mr. MONTAGUE. Without this program there would be no domestic mining industry. The record of the Bureau of Mines show that for the 5 years before this program started as Mr. Phillips says, there was only about 50,000 pounds of sheet mica produced yearly; that includes everything, strategic and nonstrategic.

The minute the program ends you might as well say there will be no domestic mica program. We cannot afford to depend on the possibility of substitutes.

I think that some day, but probably not within my lifetime, we may have a fairly complete substitute for mica.

During World War II and the years since then, a number of new insulating materials have been developed. Several of those have, say, one property equal to a similar property of mica, and such materials can be used to replace mica in perhaps one application.

But there is no material yet which possesses the unique combination of physical and electrical properties that mica possesses.

Synthetic mica offers the possible hope, but so far the synthetic mica process can only produce scrap mica and there is no telling how long it may take to bring that process to the point where it can produce sheet mica and when it does it will probably be at an enormous cost.

I would like to refer to my notes.

Senator BIBLE. Certainly, Mr. Montague.

Mr. MONTAGUE. I would like to point out one thing about the mining of mica. A ton of rock has to be moved in a mine, moved out of a mine, drilled, blasted, moved out of a mine in order to get approximately 1 pound of mica in finished shape for electrical or electronic equipment.

Senator BIBLE. The balance of the ton is completely wasted.

Mr. MONTAGUE. Not completely. I think our domestic deposits are about as good as the deposits in India or Brazil.

The main disadvantage is the terrific difference in labor cost. The wage rates in this country are several times per hour what the wage rates are per day in Brazil, and India.

Mr. Jonas and Mr. Phillips have so thoroughly covered the field, I don't think there is any need in my repeating what they have said and taking up your time unnecessarily.

Senator BIBLE. I think you have been a very valuable witness, Mr. Montague. I think Senator Malone did ask Mr. Phillips a question on production and consumption during World War II, which he might want to develop further.

Senator MALONE. Can you furnish for the record the amounts of the various grades, if there are various grades, of domestic consumption and of domestic production?

Mr. MONTAGUE. As of now?

Senator MALONE. As of now, and then to help the committee, over a period of years, say from World War II?

Mr. MONTAGUE. This has to be somewhat of an estimate. I do recall that during World War II our domestic production amounted to about 15 percent of our consumption. At the end of World War II until the beginning of the present program you might as well say it is zero.

Senator MALONE. The price fell off immediately after the war as it did in other minerals because there was no way of making up the difference between the wage and standard of living in the chief competitive country and this country.

Mr. MONTAGUE. That is it.

Senator MALONE. It does not matter how it is made up, it has to be made up; is that right?

Mr. MONTAGUE. That is right.

Senator MALONE. You have to know that it is going to be made up in order to spend your money and develop it.

Mr. MONTAGUE. That is right.

Senator MALONE. Now, I asked about synthetic mica because I understood that the Mycalex Corp.—you see this committee has a subcommittee that works almost continuously on and tries to keep abreast of these things and we were informed that a synthetic mica had been worked out by the Mycalex Corp. in New Jersey.

I think Clifton, N. J., is where they operate. I do not know the amount of their production. I have seen the product.

While I cannot pass on the possibility of its being an adequate substitute, it looked very good and I was informed that it was good.

Do you know anything about it?

Mr. MONTAGUE. Yes; I do. I was present at their Hope House when they opened that plant. They are producing at present, to the best of my knowledge, only what can be called very superior quality of scrap mica, fit for grinding into a powder only.

I believe they have every hope that eventually they will be successful in producing usable cheap mica. How long that will take, I don't believe even they will be willing to guess.

Senator MALONE. There is no way now of using this powdered mica or producing a product from it that will replace sheet mica?

Mr. MONTAGUE. I believe the purpose of this latest research program, reference to which was made a little earlier, is to try to produce usable sheet mica from the present synthetic mica production.

Senator MALONE. This committee has already gone on record and found in the 10 years I have served on it, that they support or recommend Congress support any program where synthetics have a chance of success in any field.

I think we must do that.

Mr. MONTAGUE. I believe that is correct. I think we should not only foster and promote mining of domestic mica, but also try to promote this research work. We are doubly safe if we are following both lines.

Senator MALONE. Now you say we are producing about 15 percent now of our consumption?

Mr. MONTAGUE. I don't know what the current figure is.

Senator MALONE. You will send in the figures?

Mr. MONTAGUE. I will be glad to.

Senator MALONE. In your estimation, how much could you increase the production or would it be increased over a period of years, say 5 to 10 years, if there was some long-range principle that guaranteed that difference in the wage, standard-of-living cost, taxes, between here and India or Brazil, whether it be a tariff or guaranteed price.

What point do you think we could reach in production of mica?

Mr. MONTAGUE. That is a very difficult question, Senator. With an all-out effort we certainly ought to be able to produce several times what we have been producing. The most pertinent answer I can give to your question is to point out that we can get out this mica far easier now during times of peace than to wait until another emergency develops then have to have an emergency mica production program when there are many other emergency production programs crying for the same labor, the same material.

Senator MALONE. Far beyond national defense needs there is a need for economy in this country; that is to say, in areas that you describe or your colleague described, where the family starts very young, some of them, in learning to process this mica. It is an economic situation in the community, too, is it not?

Mr. MONTAGUE. Yes, sir; it is. It is a small-scale business if there ever was one.

Senator MALONE. Is that not the way the United States is made up, you go into one community; it is mining mica or something. You go into another, they manufacture textiles, and in another it is cotton.

Is that not the way the United States economy is made up, by these little communities?

Mr. MONTAGUE. Yes.

Senator MALONE. Is not that just as important to the economy to the extent that it is important in these small communities as a part of the overall economy, is that not the thing that supports our overall economy?

Mr. MONTAGUE. I tell you it is important to the Spruce Pine district.

Senator MALONE. What would the Spruce Pine district do if this work stopped now? Is there other work they could go to there?

Mr. MONTAGUE. I suppose eventually everybody would find another job, but there would be at least temporary difficulties.

Senator MALONE. You know there has been a bill in the Senate here, it has been here for some time. That is a bill to compensate investors where their business is destroyed through imports on this policy of importing what you buy from foreign nations as some people think we must do to support their economy. It is the 1934 Trade Agreements Act that is encouraging imports through the continual lowering of tariffs or duties.

This bill would compensate not only the investors to a certain extent who lose their business through these imports, but would furnish money to move the workers from that area to another area where they can get a job.

Are you familiar with that proposed legislation?

Mr. MONTAGUE. I am sorry to say I am not.

Senator MALONE. You have heard the talk, have you not?

Mr. MONTAGUE. It seems strange. Yes; I have.

Senator MALONE. It does on the face of it. That is the way they run their business in Russia. They think nothing of it. If the Government wants to do something they just move the families to another area and they do not talk back very much.

That is the principle. For one I am not for that principle in this country. I am for the preservation of the economy of these little businesses to the extent that they can operate with that additional price for the domestic production that makes up the difference between the wage standard of living and cost of doing business and cost of doing business here in comparison with the chief competing nation.

If you have to have more protection than that, Congress can take action.

Mr. MONTAGUE. The best way to accomplish it is through a subsidy program like this. It cannot be practiced through a tariff because the tariff would have to be five or six hundred percent.

Senator MALONE. What is the matter with that? Do you mean for 24 years we have been unable to get one, and is that the reason you think it is not practical?

Mr. MONTAGUE. It would have the effect of raising the cost of mica to all consumers by that amount.

Senator MALONE. Let us get into that. What do they use mica for?

Mr. MONTAGUE. Broadly it goes into electronic and electrical equipment.

Senator MALONE. What is it?

Mr. MONTAGUE. It is an insulator. An insulator dielectric.

Senator MALONE. Mention some other products using mica.

Mr. MONTAGUE. Nearly all radar equipment uses mica, especially airborne radar.

Senator MALONE. Do they use it in a television set?

Mr. MONTAGUE. To a limited extent. There the requirements are not so severe either for electrical properties or heat resistance, so that lesser insulating materials can answer most of the purposes of a television set, but mica is esential for television transmitting. Without mica it would be impossible to transmit pictures.

Senator MALONE. What does a machine that transmits those pictures cost?

Mr. MONTAGUE. I believe the special tube called the iconoscope that uses the piece of mica probably sells for seven or eight hundred dollars. There is a piece of mica in it worth around $12 or $15.

Senator MALONE. If you increased the price of mica it would not make much difference in that machine?

Mr. MONTAGUE. Not in that, but you take a flat iron, coffeemaker, toaster, that sells for a few dollars.

Senator MALONE. What would it sell for?

Mr. MONTAGUE. $15 or $20.

Senator MALONE. Let us take a $20 toaster. How much mica does it use?

Mr. MONTAGUE. About 50 cents' worth.

Senator MALONE. Now, if you double it that would be $1.

Mr. MONTAGUE. Yes, but you have to have about a 500 percent tariff.

Senator MALONE. Then it would be worth $4. Now, what else?

Mr. MONTAGUE. By the time that value of mica gets into the finished product, you are not just adding that $2 or $3 extra; you are multiplying $2 or $3 by 3.

Senator MALONE. Why?

Mr. MONTAGUE. It is just the way manufacturing processes go on. You have overhead to add to that, profit to add to that, and so forth.

Senator MALONE. You do not have to add it to mica, do you?

Mr. MONTAGUE. I don't see why not. The overhead is based on the total cost of everything that goes into the product.

Senator MALONE. I am talking about a piece of mica that they buy ready to use and you put it in the machine. All I am trying to say is there is nothing in the United States produced today that cannot be produced cheaper in some other country with our machine and know-how, and our know-how is available there just as fast as a plane can go there.

You are talking about your own business. There is no business you can compete with with the $2 wages when you take the engineers and technicians and put them in there and invest the money.

Mr. MONTAGUE. If you put a 500-percent tariff on mica you would be in a worse position because the raw materials would go up in addition to our mica.

Senator MALONE. Why not?

Mr. MONTAGUE. You would be putting me out of business, I am confident, if there is a 500-percent tariff on mica.

Senator MALONE. Explain how.

Mr. MONTAGUE. Because consumers of mica would intensify their efforts to design around it and eliminate its use.

Senator MALONE. Then we would have enough mica?

Mr. MONTAGUE. Yes, but I don't like the idea of being put out of business.

Senator MALONE. You are producing 15 percent——

Mr. MONTAGUE. This country is.

Senator MALONE. That is right.

Mr. MONTAGUE. Under an emergency program, a subsidy program.

Senator MALONE. You do not think you are going to be put out of business. Suppose they only use 15 percent. They are still in business.

I am asking you this question: You are producing in this country 15 percent of the mica. Suppose they used then 85 percent less than they now use; they are still using all your domestic production?

Mr. MONTAGUE. That would be correct.

Senator MALONE. How would they design around you that much?

Mr. MONTAGUE. All I can say is that with such a terrific increase in cost there would be a great deal of stimulus to try to design around it. I am not an engineer, myself.

Senator MALONE. What I am trying to do is to have you fellows get over this 24-year period that you have been raised under and you think you cannot do this because for 24 years you have not done it.

As a matter of fact, we have developed the highest standard of living this world has ever known under the system. Nobody went out of business. A lot of us stayed in business.

We are talking about protecting the wage, standard of living, and the investor.

You are talking about assessing taxpayers to pay the difference, whereas as a matter of fact, if you put a duty on it is is paid for.

Mr. MONTAGUE. I could go along with you if you could eliminate all the subsidies being paid to so many different groups in the country.

Senator MALONE. This would eliminate all of them except the ones that are buying what you don't need.

Of course, $5 billion a year to foreign nations, I never did go for that. I am not about to. I am trying to stay with our own business.

Your people are working there. They are going out of work. All we want is some principle, 20 years ahead we will say. I am investing in this thing and amortizing it over 15 or 20 years because we have a principle. You have not had that for the last 24 years.

Mr. MONTAGUE. Well, I don't know how to answer you, Senator.

Senator MALONE. That is all, Mr. Chairman.

Senator BIBLE. Thank you, Mr. Montague. I think you have been a very fine witness.

The Chair will announce that we are going to run through the mica witnesses. We will accommodate any of the manganese witnesses who must leave today, though we are going to reconvene tomorrow morning at 9:30 because we have a great host of witnesses from out of town. There are some that are going to be inconvenienced by that. We will try to hear you this afternoon.

As soon as we finish mica, it will be my idea to recess until tomorrow morning.

Mr. McAbee.

Mr. REDWINE. You are an attorney?

STATEMENT OF JOHN McABEE, SR., SPRUCE PINE, N. C.

Mr. McABEE. Yes.

Mr. REDWINE. Congressman Jonas referred to your mine activity as a mica operator.

Mr. McABEE. I mine mica.

Senator BIBLE. Do you practice law to finance mica operations?

Mr. McABEE. I am an agriculturalist. They say an attorney earns money in the law office and spends it trying to farm. I spend mine trying to mine.

Senator MALONE. We have a name for that out West. You know the difference between a rancher and an agriculturist. A rancher makes his money on the ranch and spends it in town. The agriculturist makes his money in town and spends it on the farm.

Mr. McABEE. I am not a scientist. What I have learned about mica I have learned the hard way. I have been raised with it.

In the first place I would like to say to you and tell you what I have learned from observation and experience. My observation is that practically all the mica in the Southeast is in a mica belt extending practically along the Blue Ridge, beginning east of Lynchburg, Va., passing down through southwest Virginia into North Carolina, passing through North Carolina into the northern part of South Carolina, into the northern part of Georgia and practically all the way through the northern part of Alabama.

It seems that it is played out before it gets to the Mississippi. That belt will average from 30 to 150 miles wide.

On the north side of the Blue Ridge the mineral veins extend generally northeast and southwest. The mica veins almost invariably extend in that direction and dip to the southwest.

On the opposite side of the Blue Ridge the strata of the stone and the mineral formation seems to swing around to the northwest and southeast, dipping to the northwest.

It seems that there has been some kind of upheaval that caused the veins to cross and form an X, the center of an X right under the Blue Ridge.

Now, that is just an observation. There is nothing scientific about it.

Now, the best mica is nearly always found in solid rock. My first knowledge of mica was that it was mined almost entirely by men wielding a picking shovel, rolling away stuff in a wheelbarrow. The drilling was done by hand, with a hammer and a steel that was sharpened by some local blacksmith on an anvill and in a solid piece.

I would like to mention in passing a little use of tungsten. It has been found that our miners in drilling through quartz, granite, the oldtime drill would not stand for more than 20 to 30 feet of drilling. Now our miners use a type made of tungsten that will cut from 40 to 70 feet through the same material without being changed or being resharpened.

So far as I know, that is all the use we have for tungsten.

Senator BIBLE. I think some of the tungsten people might disagree with you.

Mr. McABEE. I say in our community.

Senator BIBLE. What I am interested in learning from you, and I am very interested in this history of the mica deposits along the Blue

Ridge, but I wish you would tell us exactly why you think this bill or some comparable bill, should be enacted. Will you direct your testimony to that particular point?

Mr. McAbee. Yes, I will.

Now, up to the beginning of the present stockpiling, between the end of World War II and the beginning of this stockpiling the mica industry in our country was practically dead. Now since then, the processing of mica itself has been revolutionary.

It cost 3 or 4 times as much to process mica as it did. It has to be mined with expensive machinery. Nearly all the mica miners are comparatively poor men. We are not able to, we cannot go out and buy expensive machinery needed to mine now unless we are assured that we will have more than 12 months in which to amortize our investment.

As Mr. Phillips told you, we are not asking for money.

Senator Bible. I realize that. You subscribe to what he says wholeheartedly?

Mr. McAbee. Absolutely, sir. We need more time.

Senator Bible. I think the committee is very clear on your mica problem in that respect.

I think that is a very fine point, Mr. McAbee, and I think your testimony is helpful to us. You have used only one-third of the 25,000 tons and you are asking for an extension of time so that you can attract capital and plan ahead.

Mr. McAbee. I do think the Government needs the mica and it ought to be produced.

Now, I was here in Washington one time a few years ago when some of the officials advocated the cutting out and throwing the money back in the Treasury and quitting. But we need the mica.

Senator Bible. I am sure we do. I am sure we agree with you on that, Mr. McAbee.

Senator Malone, did you have any questions of this witness?

Senator Malone. I am very much interested in your statement. I know from the way you talk that you know the business in that area.

Mr. McAbee. Just the practical side of it, sir.

Senator Malone. That is what we are interested in. We have all the theoretical side running the business in the department, but they run us out of business; they want to buy the foreign product.

Most of them do not want us to produce it in this country.

Mr. McAbee. I have seen some of the foreign laborers at work. I have spent 10 years in the Orient and I have a pretty good idea.

Senator Malone. I was pretty well over China in 1948, but I did not have time enough to stop in one place to really get acquainted with their economy.

Now, in our State of Nevada and through the Mountain States, we have many people like you who have grown old in the livestock business, in the mining business, in the business of the communities.

Mr. McAbee. Yes.

Senator Malone. I, for one, and I think I generally speak for a good many people, am interested in the economy of this country as well as the national defense of it because if our economy goes down, we will wake up in my opinion, with the kind of government we think we are fighting.

So your little communities you are talking about are familiar to me, and I am sure also to the junior Senator from Nevada, where some prospector will start out for himself, in 3 years he will hire a couple, and in 5 or 6 years he will hire 10. If he has any assurance of a market the first thing you know he is a part of the economy of the community and he grows up that way.

Now, you lose that because of some of the smart people getting this cheaper mica at $2 a day labor or 20 cents labor and we have many advocating that thing that the consumer is entitled to that low price. They do not really get it, the low price, because they run the domestic producer out.

I am interested in the thousands and thousands of little communities in this country that make our overall economy and I am not interested in any fellow that has a theory that they will repay the investor a certain amount and then they will ruin his business through imports and move those workers to another area because anyone who has any gumption at all knows that those little people, of course, are not going to pick up and try to move to Wisconsin if they stop the mica business. They are just going to have a little less to eat, that is all.

Mr. McABEE. And less to wear.

Senator MALONE. And less to wear and less to support their community and the schools.

After you shut down the community then you come up here and get Federal money to support your schools.

I have no questions to ask you. I heard what you said. I think I know your business. I congratulate you for coming up here.

Senator BIBLE. Thank you very much, Mr. McAbee.

Mr. REDWINE. Mr. McDermand, please.

STATEMENT OF LEO McDERMAND, CUSTER, S. DAK.

Mr. McDERMAND. I am Leo McDermand, Custer, S. Dak. The first thing I want to say is that I am very much in favor of extending this program. I am very much in accord with the people from North Carolina in every way that they spoke of.

Senator BIBLE. If I get your mica problem correctly, you have 25,000 tons and to date you have used about one-third of that.

Mr. McDERMAND. Yes.

Senator BIBLE. I understood the testimony to be that it would be unlikely you will take the balance of that tonnage until 1961.

Mr. McDERMAND. That is right.

Senator BIBLE. What is your proposition?

Mr. McDERMAND. If the tonnage would not last until 1961, it should be opened up so that it would, additional tonnage.

Senator BIBLE. You are asking to not only extend it until 1961, but that the tonnage be increased?

Mr. McDERMAND. Yes, sir.

Senator BIBLE. That would be an increased cost over the $5 million that has been set aside for this mica program; is that true?

Mr. McDERMAND. Yes. I would like to bring up one other thing that affects everybody in South Dakota and everybody here, too. Due to the fact of the way the mica is graded, we actually have been put out of business back there.

Senator BIBLE. That was the testimony of Mr. Bland.

Mr. MCDERMAND. Yes. I would like to show you what I mean. The Government should have had several thousand more pounds of mica in its stockpile. I would like to see when this new program is drawn up, put into a bill, I would like to see some way that they have certain standards to go by so that the people actually know that they have a program.

Senator BIBLE. As I understand, what you are saying is that Mr. Bland's approach to the problem is that the regulations now be rewritten so as to have more specifications, more definite standards?

Mr. MCDERMAND. That is right.

Senator BIBLE. To know whether you did comply or did not comply?

Mr. MCDERMAND. That is right. We don't know. It is according to who is in there who is picking out the sample.

Senator BIBLE. I recognize that is one of the problems you have. I make the same statement to you that I did to Mr. Bland, that I think it is something that our staff members can investigate and check on and see if they cannot be of assistance to you so that you are working against some definite standards, some definite specifications.

Mr. MCDERMAND. The effect of Government stockpiling the way it is, they should have had several thousand more pounds of mica in there.

This program has to be set up so that the miner, if he is going to put money in the ground, it has to be set up some way he knows what he is doing. The way it is run so far, they don't know.

A man can take a batch of mica down there one day; it brings a good price. The next day it doesn't bring you anything.

Mr. REDWINE. May the record show that the bill under consideration is open ended so far as tonnage is concerned?

Senator BIBLE. The record will reflect that.

Do you have anything further?

Mr. MCDERMAND. No. I would like to say that I would not like you gentlemen to take that too lightly because that is what is putting South Dakota out of the mica business.

Senator BIBLE. I recognize you have a problem on grading and classification and meeting certain standards and specifications. I think the committee, through the staff, should look into this and get at the bottom of it.

Mr. MCDERMAND. The program in the first place was written up and sent out there on the ASTM. The contractor, that is the way he was supposed to cut his mica down there.

We take samples of mica and they come back two times higher on the grade than what the inspector there at the plant grades.

That means right there whether the program runs or whether it doesn't.

Senator BIBLE. I recognize that. I recognize that is also a problem you run into many times and I have no familiarity with your mica program.

In the field of tungsten, miners are sending their tungsten to the custom mills they are invariably in argument with the custom mill operators as to the percentage of the WO_3 that he is being paid on.

I recognize that it is a very difficult problem to answer, Mr. McDermand. I do not think we can be helpful in legislation, by writing it in.

Do you have any further questions, Senator Malone?

Senator MALONE. I understand from your testimony that what you have to have to stay in business is an assurance of a price over a long enough period, either a principle laid down like we used to have under a duty and tariff, or a guaranteed price over a long enough period to cover the necessary expenditure, machinery, and exploration, so you can have some assurance you can get that back and make a profit.

Mr. MCDERMAND. Yes, sir; that is right.

Now, I will say most of the mining out there right now has been more or less surface mining because there are deep mines out there, say 400- to 500-foot depth, I mean if you go out and open one of those mines up it costs you between $8,000 to $10,000 to get those mines in operation.

The little man does not have that money to sink into that project unless he knows he is pretty safe on it.

Senator MALONE. Then you have to have that 5-year period or 3 or 7, or whatever it is, and in any case you cut your exploration expenditure and purchasing of machinery to fit the time.

If you do not have the time, you do not go back.

Mr. MCDERMAND. That is correct.

Senator MALONE. It can be done either of two ways: Either by the protection principle, the duty that the Constitution of the United States sets up, or you can do it through the guaranteed price.

Mr. MCDERMAND. Yes, sir.

Senator BIBLE. Thank you very much, Mr. McDermand.

Congressman Berry, did you have any questions?

Representative BERRY. No, I do not think so. I will ask consent that these boys be permitted to file additional statements.

Senator BIBLE. That is understood. There will be an order to this effect.

I think that completes the mica portion of the testimony. I am given to understand that there are two witnesses who are very anxious to leave tonight if we can possibly hear them, Senator Malone. If it will be short statements, I think maybe we can accomodate them.

We will be very happy to hear you if you will bear our admonition to keep in reasonable time.

You may state your name.

STATEMENT OF GRANVILLE S. BORDEN, REPRESENTING MOHAVE MINING & MILLING CO., WICKENBURG, ARIZ.

Mr. BORDEN. My name is Granville S. Borden. For many years I have resided at 415 Pacific Avenue, Piedmont, Calif. For the past 40 years I have practiced my professions of mining engineering and law.

For the past 28 years I have served primarily as a mineral tax consultant to producers of gold, silver, lead, zinc, antimony, tungsten, manganese, oil, and gas.

I am a past national chairman of the mineral economics division of the American Institute of Mining, Metallurgical, and Petroleum Engineers.

Here I represent the Mohave Mining & Milling Co., an Arizona corporation, with offices at Wickenburg, Ariz., which I serve as vice president and a member of the executive committee.

Senator BIBLE. Where does that operate?

Mr. BORDEN. In Wickenburg, Ariz. I shall speak more about that soon.

My purpose of appearing before you distinguished Senators today is to recite some relevant facts and persuasive arguments justifying the adoption of S. 2876, S. 3453, and the companion bills, H. R. 9993 and H. R. 9999, S. 3523, and the companion bill H. R. 10131.

My statement will deal with economic factors. I shall strive to prove that the adoption of these bills will tend to maintain and promote prosperity, deter inflation, and promote a new manganese-producing industry for America.

Other witnesses will recite the facts and arguments pertaining to the strategic attributes of manganese in our defense against aggressors in any war at any temperature.

In this statement, wherever I refer to "Miss America," I mean "we the people of the United States," you and I, and about 166 million other citizens.

Miss America currently is consuming about 2,200,000 tons of manganese annually. She buys about 2 million tons, or 91 percent, from India, Brazil, South Africa, Cuba, Mexico, and others, and she produces about 200,000 tons, 9 percent, from her own pastures.

The minerals containing manganese are of common occurrence in the earth's crust. About 0.1 percent of the solids in the earth's crust is, according to the experts, manganese. Manganese occurs in rocks which lie in the boundaries of every State within Miss America's domain.

The richest concentrations are in Arizona, Arkansas, California, Maine, Nevada, Montana, Minnesota, North Carolina, New Mexico, and Virginia.

The United States Geological Survey in bulletin 961, 1959, reports estimates for Artillery Peak district in Arizona, of 175 million tons.

Bulletins 125 and 162 of the California Department of Mines disclose that there are millions of tons of manganese minerals in many deposits throughout many counties of the State of California.

Reports by the geological surveys of other States can be cited to prove conclusively that Miss America owns within her domain unlimited quantities of this basic natural resource called manganese. The bills under consideration authorize Miss America to launch relatively small "do it herself" programs.

If this is true, why, oh why, does Miss America satisfy 91 percent of her requirements through purchases from foreigners? Are there any sound reasons why she should not mine the material which she needs from her own backyard? At least why should she—and that's you and me, and 166 million fellow citizens—refuse to launch some new "do it herself" projects as prescribed by these manganese bills?

Miss America has the raw materials; she has the labor; she has the tools; she has the know-how.

When Miss America mines her own material she converts frozen dormant assets into a new source of national income.

As long as these vast manganese deposits lie untouchable, they are of no value to Miss America, but when they are mined and processed into marketable products they become a source of new jobs, new trade,

new taxes, new wealth, and income for Miss America—a new keystone in the foundation which supports her prosperity and security.

The manganese miner of domestic minerals is, due to the income tax, analogous to a share cropper or an active partner in a firm with Miss America.

Let us explore this line of reasoning further. A mine has no monetary value to the private owner-operator except for the profits which can be derived from mining and depleting the minerals.

But if the miner makes a profit, he has to share the profits through an income-tax law with Miss America and his State. If the operator is a very wealthy individual this sharing can be on a basis of 9 parts to Miss America and his State government to 1 part to himself.

If a corporation, the split may be as low as 1 part to Miss America and 1 part to the mining corporation shareholders.

Thus, in a sense, the private owner-operator is a sharecropper, or a partner in a firm with Miss America—that is our 166 million folks.

As, if, and when Miss America decides to draw on her own vast reserves of manganese ores to satisfy her requirements, she can farm the producing job out to a share cropper—that is, the manganese miner—and she will have a kickback from the sharecropper of a portion of the profits ranging from about one-third to nine-tenths, depending on the quantum of the profits which the sharecropper derives and the quantum of income which the sharecropper has from sources other than the venture.

The sharing of the gross profits by the sharecropper with Miss America is not all of the benefactions which Miss America derives from the mining of her own resources.

In addition to the income taxes received from the sharecropper, Miss America takes a cut from wages and salaries of every employee of the sharecropper. She takes a cut from the profits of every supplier of machinery, equipment, and supplies. She provides the sharecropper with funds—which he has left after he has paid his Federal tax—which may be dedicated to develop more of her manganese deposits, or expand her processing plant, or experiment in perfecting mining and metallurgical economies, or to add to his consuming potentials.

Just briefly, the sharecropper's profits, which Miss America allows him to retain as his own, are not, as a rule, wasted—they are, in fact, new basic sources of national wealth and income which have utility in supporting Miss America's expanding economy. These profits of the sharecropper may be poured down a hole, but it is generally a hole to exploit more manganese—seldom a rathole.

The crux of this statement: Whenever Miss America procures any of her manganese requirements from her own resources she creates a new source of national income.

This is not true when she pays her gold for foreign production to satisfy her requirements. She has the supply in her own cupboard, and this supply is of no use to her unless she uses it.

Miscellaneous items pertinent to the issue in domestic versus foreign acquisitions:

(*a*) If we merely change the label of "Federal income tax" to "Federal excise tax imposed on the privilege of producing goods in the United States," the conclusion is self-evident that our domestic miners are burdened with a tariff for the privilege of placing their goods in

the market place far in excess of any tariffs placed on the imports of foreign ore, concentrates, or metals.

Through the income tax the American miner is handicapped at the post in the competitive race for manganese markets.

Thus Miss America restricts the production of her own resources.

Would it seem unfair if she alleviated these restrictions in a small degree by granting the production bonuses or assured markets at fixed prices?

(*b*) Miss America owns an underground inventory of gold at Fort Knox—about 21.8 billion, which is about one-third of her annual expenditures. Foreigners, some not too friendly to her, have first lien on approximately 13.8 billion and that leaves about 8 billion to support our faith in her currency.

The gradual diminution of the reserve is a source of profound apprehension to every patriotic, intelligent citizen who may be cognizant of the situation.

When Miss America produces her own manganese she does not put another plaster on this reserve of gold—in effect she converts underground inventories of manganese into underground inventory of gold.

Conversely, when Miss America procures this manganese from foreigners, she adds a new foreign claim to this diminishing reserve.

Now, I want to ask you, Mr. Chairman, do you want to bear with me while I give an illustration on this?

Senator BIBLE. I wish you would just highlight your statement because we have run a long, long time today. We are just trying to accommodate you and Mr. MacAfee.

The whole statement will be printed in the record.

Mr. BORDEN. Yes, sir.

In my illustration here I give you the difference. I try to prove that Miss America can pay $2.25 a unit for manganese to her own sharecropper, to produce it from her own resources or she can buy it for a dollar and a quarter from the foreigner.

Obviously she loses a dollar, but when you take the cutback that she gets from her income tax and the benefaction which will flow to her from him.

As the merry-go-round of this new national income circulates every time it circulates new taxes are taken out of the pot for her Treasury.

Senator BIBLE. That will be printed in full in the record.

Mr. BORDEN. That tends to prove that she loses nothing.

Finally, I just want to say a few sentences. I recall here when I was a kid I used to sing a song about "Who Threw the Overalls in Mrs. Murphy's Chowder." Since the veto of S. 922 by one President, I would like to change the theme to "Who Threw the Falsies in the Wenden Manganese Chowder of Miss America?"

Senator BIBLE. That is a new version.

It is probably a good note to finish the day on, so you go ahead.

Mr. BORDEN. You were told that the Wendem depot was not worth anything; it was a bunch of muck. Miss America wasted about $12 million buying it. That is not true according to the Bureau of Mines' own expert who said this can be done; that low-grade ores at Artillery Peak can be built up to a very valuable grade of ore and what Bruce Clemmer said, of the Bureau of Mines, is now being done by my company.

We are taking that and we have developed the nucleus of a new manganese-producing industry which was able to take those low-grade ores and make it into metallurgical grade and we have proved that that guy who said that to you and deceived the President of the United States when he voted that bill threw some falsies in that chowder.

Senator MALONE. I would like to ask Mr. Borden a question.

I am very familiar with your work over the years, Mr. Borden. We are all from the West. Everyone that sticks his head up, we know what he is doing.

I think you have done a lot of good work. I agree with practically everything that you have said as to the development of our economy. That is the way our economy has been developed for 180 years, economy in the counties, in the States, and in the smaller communities, and all working, and it makes an overall economy that raises the standard of living continually.

Now, what you have to have in a manganese mining development, the same as any of these other developments, is something, either a principal or guaranteed price that gives you reasonable assurance that over a period of years, far enough to amortize any investment that you might make in exploration, mills, or machinery, you could get the money back to the stockholders over the period that you have reasonable assurance that price will be maintained. Is that not about right?

Mr. BORDEN. I could elaborate on that a lot, Senator. I know that in our own experience down there we put a half million dollars in these plants and we only have a life up to June 30, 1958, on the carlot program if it remains that long.

If we had a longer time I think we would buy some big excavating machinery. We would put a roof on our mill and try to put in some air conditioning where it gets 120° down there.

We could do a lot of things, but you have to amortize that.

Senator MALONE. What you have to do in order to conduct exploration to keep your reserves and to operate properly is spend money and you will only go far enough in the expenditure of money to where you can see the end of the program.

Is that about it?

Mr. BORDEN. That is right.

Senator MALONE. Are you familiar with the range in Minnesota where there are large deposits of manganese of low grade?

Mr. BORDON. No.

Senator MALONE. I wanted to omplete the reord in that regard, although our committee reports show it. There is supposed to be there and it has been identified and explored to the extent of somewhere between 2 and 3 billion tons around 10 percent ore. It was the kind of ore that was hard to work.

Mining engineers are familiar with all that sort of thing. Sometimes it takes years to work out a method, but they have worked out a method that can reduce this ore. It is a practical thing. They say that if they are assured of a unit price for manganese above the world price that would make up that difference in the labor, standard of living, wages, taxes and cost of doing business, that they are in business.

Now, there is such a tremendous expenditure in these mills, however, that a short period does not do us very much good.

You agree with that principle that there has to be some method worked out, whether it is a tariff method or whether it is the guaranteed-price method, but a principle over a long enough period so that you can do exploration work, buy machinery and come out on that, or at least it looks like you can, before men will invest.

Mr. BORDEN. That is very true, Senator. I agree with everything you say.

Senator BIBLE. Thank you very much, Mr. Borden.

(The formal statement of Mr. Borden is as follows:)

MISS AMERICA'S MANGANESE

1. Identification

My name is Granville S. Borden. For many years I have resided at 415 Pacific Avenue, Piedmont, Calif. For the past 40 years I have practiced my professions of mining engineering and law. For the past 28 years I have served primarily as a mineral tax consultant to producers of gold, silver, lead, zinc, antimony, tungsten, manganese, oil and gas. I am a past national chairman of the mineral economics division of the American Institute of Mining, Metallurgical and Petroleum Engineers. Here I represent the Mohave Mining & Milling Co., an Arizona corporation, with offices at Wickenburg, Ariz., which I serve as vice president and a member of the executive committee.

2. Purpose

My purpose of appearing before you distinguished Senators today is to recite some relevant facts and persuasive arguments justifying the adoption of S. 2876, S. 3453 and the companion bills H. R. 9993 and H. R. 9999, S. 3523, and the companion bill H. R. 10131.

3. Scope

My statement will deal with economic factors. I shall strive to prove that the adoption of these bills will tend to maintain and promote prosperity, deter inflation, and promote a new manganese producing industry for America. Other witnesses will recite the facts and arguments pertaining to the strategic attributes of manganese in our defense against aggressors in any war at any temperature.

4. Personification

In this statement, wherever I refer to "Miss America" I mean "we the people of the United States"—you and I and about 166 million other citizens.

5. Miss America has vast deposits of manganese minerals within her own pastures

Miss America currently is consuming about 2,200,000 tons of manganese annually. She buys about 2 million tons or (91 percent) from India, Brazil, South Africa, Cuba, Mexico and others and she produces about 200,000 (9 percent) from her own pastures.

The minerals containing manganese are of common occurrence in the earth's crust. About one-tenth of 1 percent of the solids in the earth's crust is, according to the experts, manganese. Manganese occurs in rocks which lie in the boundaries of every State within Miss America's domain. The richest concentrations are in Arizona, Arkansas, California, Maine, Nevada, Montana, Minnesota, North Carolina, New Mexico, and Virginia. The United States Geological Survey in bulletin 961 (1949) reports estimates for Artillery Peak district in Arizona, of 175 million tons. Bulletins 125 and 162 of the California Department of Mines disclose that there are millions of tons of manganese minerals in many deposits throughout many counties of the State of California. Reports by the geological surveys of other States can be cited to prove conclusively that Miss America owns within her domain unlimited quantities of this basic natural resource called manganese.

6. The manganese bills under consideration authorize Miss America to launch relatively small "do it herself" programs

If this is true, why, oh why, does Miss America satisfy 91 percent of her requirements through purchases from foreigners? Are there any sound reasons why she should not mine the material which she needs from her own backyard? At

least why should she (and that's you and me, and 166 million fellow citizens) refuse to launch some new "do it herself" projects as prescribed by these manganese bills.

7. Miss America has the raw materials, she has the labor; she has the tools; she has the know-how

8. When Miss America mines her own material she converts frozen dormant assets into a new source of national income

As long as these vast manganese deposits lie untouchable, they are of no value to Miss America, but when they are mined and processed into marketable products they become a source of new jobs, new trade, new taxes, new wealth, and income for Miss America—a new keystone in the foundation which supports her prosperity and security.

9. The manganese miner of domestic minerals is, due to the income tax, analogous to a sharecropper or an active partner in a firm with Miss America

Let us explore this line of reasoning further. A mine has no monetary value to the private owner-operator except for the profits which can be derived from mining and depleting the minerals. But if the miner makes a profit he has to share the profits through an income-tax law with Miss America and his State. If the operator is a very wealthy individual this sharing can be on a basis of 9 parts to Miss America and his State Government and 1 part to himself. If a corporation, the split may be as low as 1 part to Miss America and 1 part to the mining corporation shareholders. Thus in a sense the private owner-operator is a sharecropper, or a partner in a firm with Miss America (that is our 166 million folks). As, if, and when Miss America decides to draw on her own vast reserves of manganese ores to satisfy her requirements, she can farm the producing job out to a sharecropper (i. e., the manganese miner) and she will have a kickback from the sharecropper of a portion of the profits ranging from about one-third to nine-tenths, depending on the quantum of the profits which the sharecropper derives and the quantum of income which the sharecropper has from sources other than the venture.

10. The sharing of the gross profits by the sharecropper with Miss America is not all of the benefactions which Miss America derives from the mining of her own resources

In addition to the income taxes received from the sharecropper, Miss America takes a cut from wages and salaries of every employee of the sharecropper; she takes a cut from the profits of every supplier of machinery equipment and supplies; she provides the sharecropper with funds (which he has left after he has paid his Federal tax) which may be dedicated to develop more of her manganese deposits, or expand her processing plant; or experiment in perfecting mining and metallurgical economies; or to add to his consuming potentials. Just briefly, the sharecroppers profits, which Miss America allows him to retain as his own are not, as a rule, wasted, they are in fact new basic sources of national wealth and income which have utility in supporting Miss America's expanding economy. These profits of the sharecropper may be poured down a hole, but it is generally a hole to exploit more manganese—seldom a rathole.

11. The crux of this statement

Whenever Miss America procures any of her manganese requirements from her own resources she creates a new source of national income. This is not true when she pays her gold for foreign production to satisfy her requirements. She has the supply in her own cupboard, and this supply is of no use to her unless she uses it.

12. Miscellaneous items pertinent to the issue in domestic versus foreign acquisitions

(*a*) If we merely change the label of "Federal income tax" to "Federal excise tax imposed on the privilege of producing goods in United States," the conclusion is self-evident that our domestic miners are burdened with a tariff for the privilege of placing their goods in the market place far in excess of any tariffs placed on the imports of foreign ore, concentrates or metals. Through the income tax the American miner is handicapped at the post in the competitive race for manganese markets. Thus Miss America restricts the production of her own resources. Would it seem unfair if she alleviated these restrictions in a small degree by granting the production bonuses or assured markets at fixed prices.

(*b*) Miss America owns an underground inventory of gold at Fort Knox—about 21.8 billion, which is about one-third of her annual expenditures. Foreigners, some not too friendly to her, have first lien on approximately 13.8 billion and that leaves about 8 billion to support our faith in her currency. The gradual diminuation of the reserve is a source of profound apprehension to every patriotic intelligent citizen who may be cognizant of the situation. When Miss America produces her own manganese she does not put another plaster on this reserve of gold; in effect she converts underground inventories of manganese into underground inventory of gold. Conversely, when Miss America procures this manganese from foreigners, she adds a new foreign claim to this diminishing reserve.

13. Illustration

Now to illustrate my points. Let us assume Miss America needs manganese and that she has an option—either to purchase foreign produced manganese sinter at $1.25 per unit or have an American sharecropper mine one of her equivalent units for $2.25. At first place it would appear that Miss America is out $1 if she procures the unit from her own natural deposits—but let us take a look—is she really out $1 per unit?

What does Miss America's sharecropper in this venture do with this $2.25 which he receives for this unit of manganese? In the first place he pays his employees $1.25 and he withholds 25 cents income tax for Miss America. Then he pays 50 cents for materials and supplies and they pay Miss America 10 cents income tax. The sharecropper has 50 cents taxable profit remaining and he pays Miss America 25 cents income tax. Now solely on this cash basis Miss America is not out $1 on the deal—only 40 cents because she has recouped 25 cents tax from the employees, 10 cents from the tradesmen and 25 cents from the operator. But this is not all of Miss America's recoupments. Let us see what the employees do with the $1 which they have left after their Federal tax which the employers have withheld. This dollar, after some State taxes and in many cases more Federal income taxes, is not hoarded—it is spent by employees for goods desired by the employee and a portion becomes taxable income of the citizens who sell goods to the employee. What does the supplier of materials and consumptive goods do with the 40 cents which he has left after his Federal tax? Well, he pays his labor, suppliers, and maybe dividends—and as it circulates everyone pays a tax as the merry-go-round rotates.

What does the producer do with the two-bits profit that he has left after he has paid his Federal income tax? Well, he pays a State income tax and either pays dividends, reinvests in new plants, or mines or plows the remainder into the channels of consumption. No matter when it is spent the new wealth is taxed again and again as it circulates in the channels of trade.

Of course no one can prove conclusively that Miss America would recoup the remaining 40 cents from the taxes imposed on the citizens who did business with the employees, the tradesmen and the mine operator, but sufficient evidence can be adduced to create a strong presumption that even on a cash and carry basis Miss America can never be a loser if she utilizes her own manganese resources which would otherwise have no utility in lieu of buying them from foreign fields.

Now it is important to bear in mind that the foregoing analysis disregards the innumerable intangible benefactions which flow to Miss America from the development of a long-range new manganese mining industry, and also the innumerable intangible contributions to her prosperity and security.

14. Who threw the falsies in the Wenden manganese chowder of Miss America?

Now before closing, I hope to clear a muddy record which relates to the value and utility of the stockpile at Wenden, Ariz.

In the gay nineties when I lived in the anthracite fields of Pennsylvania, I sang this song:

"Who threw the overalls in Mrs. Murphy's chowder?
Nobody spoke so I shouted all the louder.
It's an Irish trick its true
I can lick the mick that threw
The overalls in Mrs. Murphy's chowder."

Since the veto of S. 922 by our President last August, I have changed the name of this song: "Who threw the falsies in the Wenden manganese chowder of Miss America?"

Personally, I am not concerned about the "who"—whether it was State, Treasury, Interior, ODM, or GSA. My interest now is to expose for your view one of the falsies which no doubt our President believed to be genuine stuff.

I refer to assertions, which I believe were made before this committee by men high in administration circles that the Wenden stockpile is a bunch of worthless muck; that it has no utility; that Miss America procured nothing for the $12 million which she paid for it.

Here is a true record on Wenden Depot:

In January 1955, Mr. J. Bruce Clemmer, Chief of Metallurgy, Division IV of the United States Bureau of Mines, with headquarters at Salt Lake City, made a report on his study of 200,000 tons of ore and concentrates in the Wenden stockpile. I shall quote an excerpt from this report: "From this analysis we found that all the ore received at Wenden, when blended, could be treated as silicious and treated by a simple flotation method. Briefly our calculations show that about 79 percent of the manganese in the entire Wenden stockpile should be recoverable in a concentrate assaying 39 percent Mn, 10 percent Si O_2 plus Al_2O_3, 9 percent CaCO and 1.5 percent Ph plus Zn plus Cu. Sintering could reduce the base metal content to an acceptable amount. Because of the relatively large amount of calcite in the flotation concentrate, sintering would upgrade the concentrate to 45 percent Mn and 12 percent SiO_2 plus Al_2O_3."

The producers who shipped to Wenden were paid on the basis of 80 percent recovery of contained manganese and the Government deducted on a part of the receipts $12.25 per ton of ore or concentrate ($10 to upgrade ores and concentrates and $2.25 to sinter) as the estimated cost of upgrading from the grade purchased at Wenden to a 40 percent specification grade.

I am vice president of Mohave Mining & Milling Co., an Arizona corporation—offices at Wickenburg, Ariz. During 1955, we had some short term leases on several manganese properties. We shipped to Wenden, Ariz., until it was closed on June 8. We shipped to Deming, N. Mex., until it was closed on November 1, 1955. We canceled our leases. Meanwhile we read the Clemmer report; we had metallurgical tests run on ores from several properties, all of which had been a source of Wenden stockpile. We decided to shoot the works—spend $500,000 for gravity concentration, flotation, and sintering plants, to do what Clemmer said could be done. We asked the Government for nothing. The plants were finished about January 1, 1956. We advertised for interviews looking toward procuring custom ore contracts with small producers to upgrade their low grade ores to specification grade for delivery on the carlot program.

Gentlemen, it is true: We believed we could do it; we have done it; we are doing it; and we will continue to do it. We have built the nucleus of a large new manganese mining industry—call it a pilot plant if you wish. We have proven that the low grade ores of Artillery Peak, the hard and sandstone type can be upgraded into marketable products by simple physical well known metallurgical processes called heavy media, gravity concentration, flotation and sintering. We have proven negatively that the Wenden stockpile is not a pile of worthless muck but affirmatively that the ores and concentrates in this stockpile can be upgraded to marketable specifications at a cost no higher than the costs of $12.25 per ton which Miss America charged some of the producers of the Wenden stockpile for doing the job. We have proven that those parties who mislead you and possibly President Eisenhower by their claims that the Wenden stockpile is worthless—threw a falsie in the Wenden manganese chowder of Miss America.

In conclusion, I respectfully request committee approval of a bill which will incorporate the consolidated objectives expressed in the several senate bills under consideration at these hearings.

I am profoundly grateful for the honor and privilege of making this appearance and for your kind, tolerant interest in my remarks.

Respectfully submitted.

GRANVILLE C. BORDEN.

Senator BIBLE. Mr. MacAfee, we are very happy to accommodate you.

STATEMENT OF MERRILL W. MacAFEE, PARTNER, MacAFEE & CO., CONSULTING ENGINEERS, LOS ANGELES, CALIF.

Mr. MacAfee. My name is Merrill W. MacAfee. I am a partner in MacAfee & Co., consulting engineers, Los Angeles, Calif. We are consulting engineers for World Manganese Corp., in charge of its operations at Artillery Peak, Mohave County, near Wenden, Ariz.

The company has a current investment of around $650,000 in mining and milling facilities, and contemplates an additional investment of $651,000 in mining and milling equipment, if suitable protective legislation, such as is contained in bills S. 3523, S. 2876, and S. 3453, is enacted.

World Manganese Corp. now operates under the 10-car-lot GSA purchase program, which means basically that concentrates must carry over 40 percent Mn less than 15 percent SiO_2, and contain less than 50 minus 20 mesh fines, to be accepted.

To accomplish this specification of concentrate requires considerable technique in both selective mining and milling procedures.

The manganese ores are low grade and contain two general classes of manganese minerals—the amorphous type and crystalline type.

Only the crystalline minerals may be recovered in the log washing, sink-float and jig plans now in operation, and the new gravity concentrating plant contemplated for fines recovery, if the current concentrate specifications are to be met.

Even this is difficult and requires the blending of concentrates from several different mines to keep the silica, iron and barium content to acceptable grade.

For example, the company's largest ore body contains the manganese silicate minerals braunite and rhodonite and its concentrate can only be shipped in the ratio of 1 part to 2 parts of low silica psilomelane concentrate from other ore bodies.

In order to meet the car-lot program specification, the mill recovery has to be cut to about 33 percent of the manganese content.

The ore reserves are quite large, so there is little danger of quickly running low on ore, but the operating costs go up alarmingly as the recovery is reduced to skim the cream off the high-grade concentrate.

For example, at present we must mine, truck, and mill 800 tons of ore per day to produce a 60-ton car of 40 Mn concentrate, as we can only take a 3 percent recovery out of the 9 percent ore to make concentrate grade.

It takes 2.33 percent of this Mn to pay the costs and royalties, leaving 0.67 percent of the Mn for gross profit or approximately $1.37 per ton.

If we could ship a 25 percent Mn grade of concentrate, the recovery would be about 6 percent and the gross profit approximately $7.52 per ton.

The only current solution to the problem is to increase the mining and milling operation to fifteen hundred tons per day, add mining equipment, a fines recovery section, and a nodulizing plant at an estimated cost of $651,000, and take about 1 percent more finished concentrate recovery, raising the gross profit to $2.42 per ton.

Then the first 2 year's operation will be required to pay this investment back, after taxes, and the ore reserves will be reduced by 800,000 tons.

This is not the end of the problem, either, as after the expiration of the current carlot purchase program, we are faced with producing a 48 percent Mn concentrate to compete in the open market with import manganese.

While technically speaking, manganese contained in a tailings pile may be regarded as stockpiled ore, practically speaking the subsequent recovery of this manganese would present so many problems from the leaching and decomposition that such tailings may generally be regarded as lost manganese.

The problem, then, is a diminishing asset with time running out on the domestic purchase act.

Reinstatement of the program on a 25 percent Mn grade, as contemplated in bills S. 3523, or S. 2876, and also in effect in the bonus arrangement in bill S. 3453, will preserve a valuable asset from rapid exhaustion and place more manganese on the Government strategic stockpile.

The passage of any of these bills will give us time enough to work out the production of 48 percent Mn concentrate in an economic and orderly fashion to compete in the open market.

In conclusion, I would say that in the event S. 3453 is enacted, World Manganese Corp., by itself, or in collaboration with Mohave Mining Co., if they so choose, will undertake to work out the metallurgy and treat the Wenden stockpile to produce concentrate suitable for stockpiling or for sale on the open market, providing, however, that suitable terms for such an operation can be worked out with the Secretary of the Interior.

Senator BIBLE. Thank you very much, Mr. MacAfee. That will be incorporated in full in the record.

Senator MALONE. You are familiar with the depletion allowance increase in the last 2 years, 1954, from 15 to 23 percent.

Mr. MACAFEE. Yes.

Senator MALONE. Could you explain briefly, or could you submit a statement that would illustrate to the committee so that we will better understand as to what such an increase means to the miner under cerain conditions in your business?

Mr. MACAFEE. It is purely a matter of reducing taxation on profits.

Senator MALONE. It is gambling money, what I always call it. In the mineral business and oil business we know what they are both gambling businesses. If you do not have money for exploration there is very little exploration done.

I am not an oil man, I never was an engineer in the oil business. But for 35 years I have watched it. Mr. Ickes, former Secretary of the Interior, his prediction that we are running out of oil would have come true if we had done away with the depletion allowance. Do you agree?

Mr. MACAFEE. Yes.

Senator MALONE. It is the gambling money you have in the mining business, that comes out of taxes, whatever it amounts to you can gamble for more through exploration.

Mr. MACAFEE. That is correct if you have a profit from which to take that money.

Senator MALONE. Could you furnish for the record so it can be published, some illustrations that will give the committee a definite basis,

an idea under certain conditions what a depletion allowance means to you?

Mr. MACAFEE. We will be very glad to do that.

Senator BIBLE. We will be happy to have that in the record.

Is that all the questions, Senator Malone?

Senator MALONE. That is all.

Senator BIBLE. The committee will stand adjourned until 9:30 tomorrow morning.

(Whereupon, at 4:35 p. m., the subcommittee was recessed, to reconvene at 9:30 a. m., Saturday, April 21, 1956.)

78488—56——13

EXTENSION OF PURCHASE PROGRAMS OF STRATEGIC AND CRITICAL MINERALS

SATURDAY, APRIL 21, 1956

UNITED STATES SENATE,
SUBCOMMITTEE ON MINERALS, MATERIALS,
AND FUELS, OF THE COMMITTEE ON INTERIOR
AND INSULAR AFFAIRS,
Washington, D. C.

The subcommittee met, pursuant to recess, at 9:30 a. m., in room 224, Senate Office Building, Senator James E. Murray (chairman of the full committee), presiding.

Present: Senators James E. Murray, Montana (chairman); Alan Bible, Nevada, and George W. Malone, Nevada.

Present also: William H. Coburn, committee counsel; Robert W. Redwine, assistant counsel, and George Holderer, committee engineer.

The CHAIRMAN. The hearing will come to order.

Who is the first witness?

Mr. REDWINE. Is Mr. Massie present?

Mr. Chairman, Mr. Massie, representing the State government of Virginia, has a statement which he desires to have included in the record.

The CHAIRMAN. When we recessed last night, the understanding was that we were to meet this morning at 9:30; is that right?

Mr. REDWINE. Yes, sir. May Mr. Massie's statement be filed?

The CHAIRMAN. It may be copied in the record at this point.

(The statement referred to is as follows:)

My name is Charles W. Massie, mining engineer, employed by the Commonwealth of Virginia, Department of Conservation and Development to render services to landowners who have, or think they have, minerals on their land. For the past several years, I have placed special emphasis on the development and production of manganese.

I have spent the most active years of my life in the business of manganese mining. In 1922, Mr. N. H. Mannakee, Mr. J. Carson Adkerson, and I, all three mining engineers, organized the High Grade Manganese Co., of Woodstock, Va. For a time I was secretary-treasurer, later becoming manager. We began by hand-mining on the surface, driving tunnels, in the ore vein and in the first few years shipped only hand-mined ore for specialty purposes, such as the manufacture of bricks and to the chemical industry. We built small concentrating plants and later a large pilot plant. In 1926, we employed Dr. J. S. Grasty, eminent geological engineer of Charlottesville, Va. to sample, test, and report on our property. By that time we had driven over 5,000 feet of shafts, tunnels, winzes, and up-raises. Dr. Grasty's final report gave nearly 300,000 tons of positive blocked out, high-grade ore with a probable ore reserve of several times that amount.

In 1929, we built one of the finest manganese beneficiation plants in the world; the plant alone costing between two and three hundred thousand dollars. We also purchased power equipment and other mining machinery. The building of the new plant and the extra work consumed approximately 1 year. This was in

1929, and at that time, the Russian Government had seized the mines which had been developed by American capital, in the Republic of Georgia and began dumping the ore, which they mined by convict and conscript labor, on the American market and offered to sell the ore at a price that would undercut any price at which our domestic ores were offered. Therefore, our mines were forced to close and, in spite of the fact that we held on until 1936, our investment was a complete loss.

This country has been largely dependent for manganese ore mined by the Russian Government for years, who have deliberately furnished cheap ore in normal times as they do not wish to see our domestic manganese mining industry develop and grow to a point where we would be independent of their supply.

Not 1 ton of good grade steel can be made without manganese, therefore, in time of war Russia can and does cut off our supply of manganese which leaves us at the mercy of the world markets to secure our manganese. They have repeatedly used cheap manganese as a stragetic and political weapon which makes us dependent on her and stifles our United States production. This has occurred several times in the last 40 years. It takes years and lots of capital to develop mines and bring forth the production of manganese. Therefore, in times of war or duress, it is too late.

At present the United States takes a large portion of the free world output of high-grade ores. India, Union of South Africa, and Brazil, have small but growing steel industries of their own and will eventially be drawing more heavily on their domestic manganese deposits for home use. French Morocco directs much of its ore to Europe, and the Gold Coast is called upon heavily for European needs.

Since the purchase program of domestic ores was inaugurated by the General Services Administration under the law of 1950, amended in 1952, production has made rapid strides. Virginia shipped 7,540 long, natural tons of high-grade manganese ore in the year of 1953. In 1954, 20,250 long tons, and in 1955, 32,635 long tons were shipped. This shows what can be done when the operators have a guaranteed sale for their ore and are not faced with a sudden collapse in the market due to the importation of cheap ore mined by cheap, convict, conscript and forced labor.

The difference in the price of the ore that is now being bought by the General Services Administration carload lot program and the price of ore on the open market would raise the cost of the manufacture of a ton of steel less than $1. As we all know, the steel manufacturers do not hesitate to raise the price $4 to $6 per ton of steel at the least excuse. I think this was done just after the steel companies made their last agreement with their union labor.

The money that the United States Government uses to purchase this strategic mineral for our stockpiles is not a handout, but it is an investment in our national security and at the same time, they will be able to reimburse themselves by the sale of this ore to the steel companies in time of duress or war. Further, it will be of great economic value to the States in which the ore is being mined, also the State and Federal Governments will be collecting taxes from this going industry.

In 1951–52 the full capacity of steel production in the United States was approximately 94 million tons a year. In the year 1955 over 117 million tons of steel were produced. It has been announced in financial news that the steel industry now has a program to spend $1,700 million for the construction of new steelmaking facilities, and in a very few years they expect to be manufacturing 148 to 150 million tons of steel per year. Therefore, the stockpile program set up in 1950–52 will be vastly inadequate by the years 1960–65.

In the annual budget, I understand, that around $40 billion will be spent for national security purposes, therefore, it seems that the few million dollars spent by our Government to guarantee an adequate supply of manganese ore, which is the keystone of our total security, is very small indeed.

The CHAIRMAN. Who is the next witness?

Mr. REDWINE. Mr. Steve Lacey.

Mr. Lacey, you know the procedure. Will you state your name and so forth, please?

STATEMENT OF STEVE LACEY, JOHNSON CITY, TENN.

Mr. LACEY. Mr. Chairman, I am Steve Lacey, Johnson City, Tenn., Chamber of Commerce, and chairman of the minerals committee of that group.

I am very happy to be here and have been very interested in all of the testimony that has gone before me.

The thing that we are primarily interested in, sir, is the fact that we feel that this program definitely affects our economy. For many years we have had small mining operations in our area that are of the wagon type, the wheelbarrow type, you might say.

Now, we have some companies that have brought heavy equipment in, employing hundreds of people, and we want that economy to continue.

There is a valley there in our county. On one side we have a mountain; on one side we have an agricultural group in the valley. On the other side of the mountain in the next valley there are about a hundred mining houses.

Now, we feel that our Government should give the same attention to the people who have chosen mining to gain their livelihood. We feel that our Government should give the same attention to those people on this side of the valley as the agricultural people on the other side of the valley.

In all of these hearings I have been interested in some conclusions that have been reached. I was over at the House hearing. The cost of this program has come up on several occasions.

It was interesting to me that last year in reading the paper and a statement from one of our distinguished Senators in the East, that this program would be burdensome from a cost viewpoint. That statement was made in the paper on one day.

The next day I heard an assistant of Dr. Flemming testify that if everything was considered, all costs considered, in technical advance, in loans, transportation of officials to go over and set these programs up in foreign countries on manganese, that the cost of the domestic program to the taxpayer of this country would not be any more than it would to put on these programs in foreign countries.

So to me, that eliminates somewhat the cost factor and the burden on the taxpayer as far as this domestic mining program is concerned.

Now, if these costs of all the aid we are giving in foreign countries are as great to us as the domestic program, I think certainly that it is very unfair to our people to ask them to give up and to let our program die in this country when it is not going to cost any more money.

Now, as Mr. Redwine says, we are very anxious, of course, to move this thing along, but there is one observation I would like to make:

I was going home on a plane with a technical man from one of our large companies in this country and he was on his way to make a donation to one of our southern universities of several thousand dollars.

I asked him why they were making those appropriations to these various universities over the country. He said, "Well, Mr. Lacey, that is simple. We can see that the Russians are emphasizing scientific development and the education of scientists in their country. Now, if we neglect in this country to encourage men to go out and to be educated as scientists, then they are going to outdistance us in future development and we will be left behind."

Now, here is what I am trying to say, as that fits in the mineral program. I might say I was on a college faculty, myself, for 15 years and dean and vice president of a college for 5 years.

I have read a great many pamphlets and publications on the exploration and mining and milling of manganese. Now, I am not an engineer; I am not capable of giving any conclusions as far as engineering is concerned.

However, I can see this as a former educator, that in our pamphlets and in our books, we have not developed a scientific approach to the mining and milling of manganese.

Now, why is that true? That is true because you have to take field experience in the mining of manganese and translate that information back into textbooks so that these young people can be educated.

If we are going to have an industry, we are going to have to let it continue enough that these scientific conclusions can be reached and translate it back, so that our youth can come along and turn the pages of those textbooks and read the real foundation and scientific approach to the mining and milling of this material.

Now, how else are we going to develop a far-reaching program?

It is only by going into the field. I will give you an illustration of that:

We have influenced certain companies to come into our territory and we have felt bad that definite information is impossible to get as far as how much tonnage is in this area and so forth. In fact, in 1946 we had a man come to Washington to get a loan to mine manganese. He was told that there was not more than 1,200 tons of high-grade manganese in our whole area.

But last year, within a 50-mile radius, there was more than 20,000 tons of high grade manganese mined and shipped from our area.

Now, that is what we are up against.

In conclusion, I wish to say that, having been a former educator and having been dean and counseled with young men who, if they are scientific minded, come in and ask the dean, "Now, what fields of activity are open to me?" How can a college dean advise a young man with the state of confusion that exists today in the mining industry? How could a college dean conscientiously advise that young man to cast his lot into the mining field to mine these minerals that are on this list today?

I would say that a college dean that does that is not being fair to that young man, sir. I feel very keenly about this problem and I feel that somebody somewhere should be as well informed—these people who are going to make the decision, who hold the decision in their power, should be as well informed, as well educated, and have the same sympathetic understanding towards this problem as your committee has, sir.

I think it is left up to our group who are interested, and your group, sir, to educate these people to the extent that this gathering here and your committee, sir, is already educated.

The CHAIRMAN. Thank you very much for your excellent statement. I think everything you have said is very logical and I am in accord with it.

Mr. REDWINE. Mr. Morris W. Bush.

Mr. E. David Graham.

Mr Henry Styskal.

Mr. A. R. Olson.

STATEMENT OF A. R. OLSON, MANGANESE CORPORATION OF ARIZONA, SOCORRO, N. MEX.

Mr. OLSON. My name is A. R. Olson. I am vice president and one-third owner of Manganese Corporation of Arizona. We mine low-grade manganese or varying from 5 to 15 percent manganese. We have shipped under the low-grade program in Deming, and we are now shipping under the carlot program.

Our present production is at the rate of 30,000 tons per year of concentrate averaging better than 40 percent.

We could double our production if we had assurance of a continued market.

We employ 110 people, making for $45,000 monthly payroll. We pay about $12,000 monthly direct taxes, plus an additional $50,000 to $60,000 a month for supplies and equipment.

We have a total investment in excess of a million and a quarter dollars in our property and in our mill. The property we are operating has been operated on and off since 1918 by various people. It is now a successful operation for the first time.

We have repaid a loan against the property of over $100,000 to the RFC, which was incurred by previous owners.

The town of Socorro, which is 8 miles from our property, is enjoying a mild boom, its general prosperity having increased 20 percent in 1955 over 1954. This has been entirely due to manganese mining in the area.

I would like for the record to show this letter from the chamber of commerce from Socorro, to show what they have to say.

The CHAIRMAN. It will be printed in the record at this point.

Mr. OLSON. Thank you, sir.

(The letter referred to is as follows:)

SOCORRO COUNTY CHAMBER OF COMMERCE,
Socorro, N. Mex., March 21, 1956.

Mr. CHARLES CRUMLISH,
Manganese Corporation of Arizona,
Socorro, N. Mex.

DEAR MR. CRUMLISH: Socorro County's general prosperity has definitely been increased in 1955 by 22 percent over 1954, according to the Bureau of Business Research at the University of New Mexico.

When this office made spot checks among business establishments to determine 1955 business progress in the city of Socorro, the most frequent reply was, "the best year in history," and the reason was generally established as the local development of manganese mining and milling.

The population of the city has grown steadily for the last 5 years. We have estimated the following figures according to the 1950 census (4,334), taken in the early part of the year, and the number of residential electric meters (1,192) on the last day of December 1950.

Year	Estimated population	Number of electric meters (residential)	Year	Estimated population	Number of electric meters (residential)
1951	4,454	1,204	1954	5,420	1,465
1952	4,824	1,304	1955	5,609	1,516
1953	5,061	1,368	February 1956	5,642	1,525

Due to the difference in time of the 1950 census and the meter count, we estimate our population at 6,000 to date.

Our county retail sales for the past 3 years are:

1953 ---------- $6,032,000 (Taxpayers Association).
1954 ---------- $6,069,000 (Taxpayers Association).
1955 ---------- $7,416,000 (Business Research, USM).

Housing facilities in the city during 1955 were quite scarce, and prospective newcomers left town to find living quarters. Residents were established in hotels and motels.

However, many rental units and homes have been built within the last year, and there are two housing developments underway at this time.

According to figures from the State bureau of mines, the following figures show the increase of manganese development in this area:

End of fiscal year—June	Tons of ore processed	Valuation
1954	5,000	$128,000
1955	52,500	1,530,000

Production rates, since June of 1955, would indicate approximately 100,000 tons of processed ore a year valuated at approximately $3 million.

Socorro's growth is due to this increase in mining activity and the influx of personnel from nearby Government installations.

Sincerely,

SOCORRO COUNTY CHAMBER OF COMMERCE,
NATALIE D. ARNOLD, *Manager*.

Mr. OLSON. There are many more mines in this area that could be developed, but because of the expense they cannot show a fair return on investment so they will not be opened.

Mr. Moon testified before the House Subcommittee on Minerals in February 1948 as chief of the Mining Division, Bureau of Mines, that the bureau had found 196,000 tons of 24 percent manganese in New Mexico.

Mr. Lemke, chairman of the committee, stated that production for the years 1940 to 1946 totaled 6,559 tons in New Mexico.

In the past 18 months our company has mined over 1 million tons of manganese, averaging about 7 percent manganese and shipped approximately 50,000 tons of ore, averaging about 38 percent manganese.

In so doing we still have about 2 to 3 million tons blocked and an additional 5 to 10 million tons indicated.

This confirms Senator Malone's statement regarding chromite day before yesterday, that only by actual mining can large ore reserves be discovered because ore is often found where prudent people would condemn its presence. By actual mining our company has proven large ore reserves where the Bureau of Mines said the reserves were negligible. Under the existing regulations we operate under, we are only allowed to ship 10,000 tons of concentrate to the high grade program per year. Our operation is so set up that we will have shipped our 10,000 tons by the first of June, or a little bit before.

Now, we cannot shut down our property and wait until next year to ship another 10,000 tons, so we are compelled to sell our properties piecemeal and take a mining and milling contract.

This has been approved by GSA, but it works an extreme hardship on us in that we have to forego our tax depletion allowance.

We would then operate strictly as a custom mill for two-thirds of the year having shipped our allocated 10,000 tons the first one-third of the year.

These bills all provide for that limitation to be removed, which I think is very sound. Because of the short duration of our program, we have stopped all exploration for new ore bodies. Our stripping will be completed in the next 30 to 60 days for the duration of the program, so we will have no more incentive to look for additional ore reserves.

Of the various bills that have been introduced, naturally there is not any of them that we would object to. I agree with Mr. Long's statement the other day when he said there might be a difference between what we would like to have and what we can get signed and approved.

I do not know if it is proper to introduce this bill for the record, but here is a bill which has been introduced, but it was introduced too late to be put on the agenda for this committee.

This bill is different than the others in that it is the cheapest as far as manganese is concerned.

The CHAIRMAN. Which bill are you referring to?

Mr. REDWINE. S. 3636.

May I request that it be referred to by number, in respect to this gentleman's testimony?

The CHAIRMAN. Very well.

Mr. REDWINE. Will you read the number of it?

Mr. OLSON. The bill is S. 3636. This bill calls for just strictly a continuation of a high grade program without the low grade.

Of course, I am in complete sympathy with the low grade and would like to have it, but this bill is considerably cheaper inasmuch as it does not have the low grade in it.

I would like to quote from a White House memorandum of disapproval wherein the President vetoed the bill of last year. He stated:

> I am conscious of the desirability of developing a long-range minerals program for the United States to assure an adequate mobilization base and to preserve a sound minerals economy. The advisory group on minerals policy has so advised and the Office of Mineral Mobilization has been established in the Department of the Interior to determine and recommend such a program.

Mr. Spencer Shannon, as Director of the Office of Minerals Mobilization, told the Institute of Mining and Metallurgical Engineers in New York on February 21, 1956, that—

> Some people have the impression that the office has responsibility for long-term mineral policy. The office has no such responsibilities.

I think that shows that we cannot rely upon that office to recommend a minerals program.

I would like to say in closing that we have received excellent cooperation from the General Services Administration in New Mexico in selling them our ore. We are very happy to commend their services.

The CHAIRMAN. Thank you for your fine statement.

Do you wish to ask any questions, Senator Malone?

Senator MALONE. You say you are limited to the 10,000 tons. Will you explain that limitation?

Mr. OLSON. I do not have the regulations before me, but briefly, they state that any shipper to the high grade program can only ship 10,000 tons of concentrate per year.

Senator MALONE. Is that in the bill?

Mr. OLSON. No, sir. It is not in the bill, it is in the regulations established by the General Services Administration.

Senator MALONE. What other grades are accepted under the bill?

Mr. OLSON. That is the only grade. It has to have 40-percent manganese content and less than 15-percent silica, less than 15-percent fines, and so forth.

Senator MALONE. Now, you have mentioned the bill S. 3523 and mentioned a bill that was recently introduced. What other bills are satisfactory to you?

Mr. OLSON. S. 2876, your bill, is satisfactory. We are not excited about the so-called omnibus bill, S. 3453, because we do not understand it too well. We have to sell our ore on the open market price and we are not sure that we can do that.

Senator MALONE. You are satisfied with any legislation, that is, if it would keep the mines open and going, that would provide a price and made up the difference between the world price and the needed domestic price caused by the difference in the wages, in the taxes, and the cost of doing business here and in the chief competing country on that mineral, are you?

Mr. OLSON. Yes.

Senator MALONE. And if that would provide for the purchase of enough of the commodity, whether it is manganese or any other metal, do you think is would be satisfactory so that the mines could run?

Mr. OLSON. Yes, sir.

Senator MALONE. Now, we have gone over this many times, but I have always found that no one seems to have understood it after it is over.

Can there be a successful mining industry that always goes by 1 or 2 or 3 years and beyond that uncertainty?

Mr. OLSON. No, sir.

Senator MALONE. That is all. You have made a good witness.

The CHAIRMAN. Thank you very much for your statement.

Mr. OLSON. Thank you, Mr. Chairman.

Mr. REDWINE. Mr. Guseman.

STATEMENT OF A. RAY GUSEMAN, PRESIDENT, BLUEFIELD MINING CORP., WHITE GATE, VA.

Mr. GUSEMAN. My name is A. Ray Guseman. I am the president of the Bluefield Mining Corp., White Gate, Va.

We just recently completed our plant, ready to start production.

First, I would like to give you a little graphic account of the conditions in our county in regard to finances and labor situation, which are in destitute conditions at the present time.

Our county is very mountainous and hilly with perhaps about 90 percent of the land practically worthless so far as surface is concerned. The whole county has a population of about 6,400, of which amount perhaps there are about 1,300 men, some few of them too old to work.

There is very little industry. No farming to speak of; some cattle raising and a few sawmills which employ maybe 30 or 35 men; also, at present, 4 manganese concentrating plants that will eventually employ about 150 or more men directly and indirectly.

The thought I bring to mind is this: Bland County, Va., where we have manganese ore, is very hilly, rugged and practically worthless land. I believe all other areas where manganese is found are about the same as apparently it is only found in the mountains.

As I have previously stated, the four concentrating plants now ready for production will employ about 150 to 200 men. If our manganese program is extended until 1961, as we are hoping, I am sure there will be more plants built as I know several more leaseholders who are afraid to invest because of the instabilities of the present program.

This would entirely take care of our employment situation as well as the financial difficulty of our county. It is a very well known fact that our Nation experienced an extreme shortage of manganese in World War II, and I believe it is still No. 1 on our Government's list of strategic and critical materials in case of war.

Man has not as yet devised a substitute for old Mother Nature's formula for manganese and as I understand steel cannot be made without the addition of manganese, from 14 to 16 pounds per ton depending on the particular type of steel.

In my belief in this atomic age, if our country were involved in another war, it would be an utter impossibility for us to import any manganese from any other country, but I think our country could be made entirely self-supporting and would need no imports of this strategic metal provided the program is extended until 1961.

I would like to state according to the information which I have had, the Government has never thought the manganese ores of Virginia to be of much commercial value, due to scarcity and quality. They did some investigating on this on Flattop Mountain, and also Round Top Mountain. These investigations did not prove to be good so they just simply condemned Virginia so far as manganese is concerned.

But private prospecting has shown Virginia abounds in good high-grade manganese. There are thousands upon thousands of tons of ore of 40 percent and better, and additional thousands from 35 percent up, that only needs development to show its worth.

The East River Mountain, Buckhorn Mountain, Flattop, Brown, Big Walker, all have plenty of manganese.

The only thing needed in the manganese industry at present to make our Nation self-reliant, is incentive to go ahead with future development, that no enterprise can succeed without the proper incentive.

You know, necessity is the mother of invention. We have many improvements in our plant over most other plants in that we have bins for the ore and tailings so that trucks can be loaded without any hand labor, a storage bin within the ore washer and concentrating plant and have density separators so the ore washer can be operated independently. All this can cut production cost as well as increase the capacity of our finished material.

I might add there is still plenty of room for improvements. With the proper stimulus I believe eventually we shall have production up

to where we need no imports and the price received for our ore will be sufficient to keep us going.

But we need protection and help to entice the proper amount of capital to develop the industry and the time until 1961 will be short enough as it takes about 2 years to get a plant in production, not under construction alone, but the redtape in connection, such as a permit from the water board for making a sediment pond and so forth.

Give us the protection of this bill, S. 3523, and we will get the ore to eventually compete with the foreign trade as to price.

Of course, at the present time, we cannot hope to compete with the prices of foreign ore as we pay our men good wages, in fact, very, very high wages in comparison to the cheap foreign slave labor, but improvements in production methods will eventually overcome this differential.

These foreign labels, such as "Made in Japan," "Made in Czechoslovakia," and "Made in Italy," certainly are not good for the morale of American labor and industry.

For the good of our Nation as a whole, let us get away from all of them that we can.

Thank you.

The CHAIRMAN. Are there any questions?

Senator MALONE. Yes.

I think you have made a very fine witness, and you have announced a philosophy there which I really sincerely believe in, and I think every American does when he understands it.

What percent manganese does your ore generally run, on an average?

Mr. GUSEMAN. It will run from 40 percent on up.

Senator MALONE. Is that as it is mined?

Mr. GUSEMAN. After it is concentrated.

Senator MALONE. I mean the mine run?

Mr. GUSEMAN. Yes, sir.

Senator MALONE. That is what?

Mr. GUSEMAN. Anywhere from 40. I have not shipped any of it myself. As I said, I just opened my plant, but we have some ore with an analysis of 58 percent.

In an average run through the plant, I would say it goes 50 percent.

Senator MALONE. You mean it is 50 percent as it comes out of the mine?

Mr. GUSEMAN. No, it is probably about 57 percent as it is mined, some of it; not all of it. On the average I would say it would run about 50 percent.

Senator MALONE. What do you mill it for?

Mr. GUSEMAN. To get the mud and stones and so forth out of it.

Senator MALONE. What does it run after you mill it?

Mr. GUSEMAN. This ore that I am speaking of in particular, will probably run about 50 percent manganese.

Senator MALONE. All you take out, then, is the mud?

Mr. GUSEMAN. We take the mud and stones.

Senator MALONE. You do not grind it?

Mr. GUSEMAN. No, sir. We crush it down to probably the size of walnuts. This ore will have a chunk, these gears we use squeeze the piece of ore, and it will break wherever the weakest point is, which may be a seam of mud or sand through it.

Of course, when we rewash that takes that sand and mud out of it.

Senator MALONE. You have probably seen the report that this committee turned out, Senate Report 1627 of the 83d Congress, where we said this hemisphere can be self-sufficient in all these materials.

We know that. You say that you think the domestic production could be made self-sufficient for all our needs.

Mr. GUSEMAN. I think it can be.

Senator MALONE. You mean if there is some legislation that makes up the difference in that price above the world price due to the difference in wages and taxes and costs of doing business, why, you are in and it can be done?

Mr. GUSEMAN. Yes, sir.

Senator MALONE. But you have to have that?

Mr. GUSEMAN. Yes, sir.

Senator MALONE. Either through a duty, tariff, or through a guaranteed price?

Mr. GUSEMAN. Yes, sir; under our present circumstances we will have to have that in order to continue.

Senator MALONE. If any bill that this committee would report, that would probably be approved and keep you in the mining business for another 5 years, you would be very happy about it?

Mr. GUSEMAN. Tickled pink; yes, sir.

Senator MALONE. Yes.

The CHAIRMAN. Thank you for your very fine statement.

Mr. GUSEMAN. Thank you for giving me a chance to testify.

Mr. REDWINE. Mr. Klovstad, please.

STATEMENT OF ODIN V. KLOVSTAD, COLONIAL MINING CO.

Mr. KLOVSTAD. My name is Odin V. Klovstad, owner of Colonal Mining Co., a manganese ore bearing property in southwest Virginia.

This statement is submitted in support of S. 3453, as it relates to manganese.

My interest in the domestic manganese industry is of recent origin, and my participation to date has been on a limited basis. I hold a 20-year mineral lease from the Federal Government on some 2,300 acres of manganese ore-bearing land in southwest Virginia.

Senator MALONE. You mean it belongs to the Government?

Mr. KLOVSTAD. It belongs to the Government. The lease covers a tract which lies in Bland and Giles Counties, Va., in the area close to Mr. Guseman's operations, who testified just previously.

This tract has not been developed. However, limited prospecting has disclosed extensive deposits of low-grade ore having a manganese content of from 20 to 40 percent.

There are also scattered deposits of high-grade ore that will yield manganese testing 40 percent and better.

It is evident that this tract of ore-bearing land could become a valuable source of manganese. However, under existing law, there is little incentive to proceed with mining operations. There is no Government purchase program in this area to stimulate the mining of low-grade manganese ore.

Moreover, the Government carload purchase program for high-grade manganese ore is due to expire in 1958. Thus, under present circumstances, capital expenditures for the mining and beneficiation

of manganese ore on this tract are not warranted. I believe it is safe to say that much the same situation prevails with respect to the many other holders of prospecting permits and mineral leases on manganese ore-bearing lands in the Southern Appalachian area.

Enactment of S. 3453 would open the way for the profitable development of these extensive areas of low-grade manganese ore in the Southern Appalachian area.

It would also permit the recovery of such high-grade manganese ore deposits as would be disclosed during mining operations.

The American manganese mining industry needs the support of our Government as much as does our farmers and other distressed segments of American life.

The enactment of S. 3453 would do more than assist the producers of manganese. The more immediate effect would be to alleviate the unemployment situation that exists in so many of the mining areas and to raise the living standards of many distressed families.

But most of all, it would establish a broad base for the ultimate development of a sound domestic manganese mining industry that could serve America in both peace and war.

The President made a statement only recently that would seem to warrant consideration. In his message to the Nation outlining his reasons for returning the farm bill to Congress without his approval, he stated:

> I have one yardstick by which I test every major problem, and that yardstick is: Is it good for America?

Is it not clear that an answer to this question would be in the affirmative when viewed in the light of a law embracing the provisions of S. 3453? May we hope that the President will so conclude.

Now, I believe the only further remark I would make is that I believe that in the past the bills that have been presented to the President and to the administration have been predicated primarily on the Defense Production Act, and related primarily to the stockpile requirements and to defense.

I believe that the approach taken in S. 3453 is a good one; that it steers toward an improving of the domestic economy.

I believe that approach is desirable. I think the testimony thus far has borne that out, that that should be the principal consideration, and the preamble might even be shored so as to state frankly and forthrightly that that is the purpose of the bill, to improve the lot of the domestic mining of manganese and other minerals to which they would apply.

Now, with respect to the technical aspect of the bill, I think it is recognized that the one portion with respect to producers selling at market price does not seem to be realistic because it is quite evident that the large consumers of manganese in this country want to buy in large lots. That has been the experience. They will buy bulk loads from 500 long tons upward, and for small producers of manganese to attempt to get into that market, they are going to have to sell their material as distress material and how to get around that, of course, is a problem.

I think in the area of marketing, the large domestic producer of manganese could possibly deal directly with the consumers of manganese

in this country, but the small producer is going to be hard put to market his product.

I believe in that respect we might think of some method whereby the Government could assist in the marketing of manganese for the small producer. One way to do that would be possibly to have in the bill a provision for a manganese marketing association to which possibly the small producers could be members and pay their way so as to be self-sufficient where the very small producers could market their product through an association and get a better price and be able to furnish larger lots to consumers.

I think that ends my statement.

The CHAIRMAN. Thank you very much for your statement.

Do you wish to ask any questions, Senator?

Senator MALONE. You don't seem to realize that what you are up against is the world price and domestic price.

Mr. KLOVSTAD. Yes; I am aware of that.

Senator MALONE. As long as the production from other countries can come in without duty or tariff, then you must have some method of getting that difference if you are to sell it?

Mr. KLOVSTAD. That is indispensable.

Senator MALONE. Now, the situation that we are using on the farm prices where if you cannot sell it at a certain price, the Government buys it at a profitable price; in other words, frankly making up the difference between what it can be imported for and what you can produce it for, something on that principle would suit you all right, I suppose?

Mr. KLOVSTAD. Right.

Senator MALONE. We might just add it to the farm bill?

Mr. KLOVSTAD. Yes, sir.

Senator MALONE. But we have gotten into this other drive.

Putting it another way, what you have to have is something to make up the difference in the wages and taxes and cost of doing business here and where your competition is in the world.

That again is about right?

Mr. KLOVSTAD. That is true, in order to compete.

Senator MALONE. Whether it would be a duty as mentioned in the Constitution, or call it a tariff that makes up that difference and taking the profits out at the water's edge, so you would be in competition, or a bill guaranteeing a price over a period of years, would that meet the situation?

Mr. KLOVSTAD. It would.

Senator MALONE. Tell me how mining can be done without a long-range principle laid down by Congress, or a bill frankly guaranteeing a price up above the world price to pay our wages and taxes, can it be done other than in either of those two ways?

Mr. KLOVSTAD. There is no other way in which domestic mining can go forward and grow and become a healthy industry without the stimulus that could be gotten from a Government-supported program.

Senator MALONE. Now, can you ever have a healthy mining industry when you have 1, 2, 3, 4, 5 years only to look ahead and you never could have much more than that under any of the bills that are introduced here, could you ever have a real all-out mining industry under those conditions?

Mr. KLOVSTAD. I don't think you can attain the objective that I think is desired, but I think under present circumstances if a 5-year extension were granted that would at least give an opportunity to get things on the road, you might say, and give the Congress further time to see to what extent it should be enlarged, modified, or extended.

Senator MALONE. Congress has had 24 years now, so I guess 4 or 5 years would not hurt them.

But we show no signs of adopting a principle.

Now, you are in the business and you think you could make some money if you had 5 years, but for someone who is not in the business at all and would like to go into it if they had 3 or 4 years to locate the property and build a mill and make some money, how long would that take, about 10?

Mr. KLOVSTAD. Before they would invest any substantial amounts they would want to be assurred of a longer range program than that. So there is an impediment right now to private capital because of the short range of the program.

So the longer the program would be, the more you could invite private capital to assist.

Senator MALONE. The situation is, then, as long as we do this piecemeal there will never be an all-out mining industry?

Mr. KLOVSTAD. I don't think so.

Senator MALONE. Then you mentioned one bill I think would be all right, too, but a simple extension of the bill you have been operating under, 5 or 3 years, or whatever it is, so you could operate for another 5 years, which is bill S. 2876, would be satisfactory.

Mr. KLOVSTAD. To the extent of the carload program, it would be. I don't know whether that provides for low-grade program in the Southern Appalachian area, but I should think that should probably be included if it is not.

Senator MALONE. When you talk about a low-grade program, what grade of ore do you offer for sale?

Mr. KLOVSTAD. Under other low-grade-ore programs in the country the General Services Administration will buy manganese graded, I believe, from about 12 percent up to 40 percent metal content.

However, the present purchase program is limited to certain deposits in the West.

Senator MALONE. Are you aware of the fact that there is quite a move on now to take those stockpiles and beneficiate ore up to a grade that is usable grade, that they seem to have all the low grade that they want to buy?

Mr. KLOVSTAD. I believe I have heard that.

Senator MALONE. Now, then, your ore without much trouble can be beneficiated, I think I heard you say, up to 35 or 40 percent; is that right?

Mr. KLOVSTAD. I think it is well established that processes have been developed which can upgrade the low-grade ores in the Appalachian area.

Senator MALONE. That would come under bill S. 2876, without any difficulty.

Mr. KLOVSTAD. I am not acquainted with the provisions of that bill.

Senator MALONE. This bill is a simple extension of the one you are operating under. Then it is all right?

Mr. KLOVSTAD. To that extent it could be operated under. I would be inclined to think so.

Senator MALONE. Are you operating now?

Mr. KLOVSTAD. To the extent that we are doing prospecting.

Senator MALONE. Is there anyone in your area in the South operating?

Mr. KLOVSTAD. There are four mills that are producing in that particular area.

Senator MALONE. Are they selling under this arrangement you now have?

Mr. KLOVSTAD. They are selling under the carload program, which provides for manganese 40 percent or better.

Senator MALONE. You can produce 40 percent or better?

Mr. KLOVSTAD. To a limited extent. I think to a larger extent it would be the low-grade ore program.

Senator MALONE. You would have to sell it at low grade and not try to beneficiate?

Mr. KLOVSTAD. That is right; it would be sold as low grade to the low-grade depots as has been done in the West.

Senator MALONE. Is there any process by which this low grade that you want to sell can be made 40 percent or better?

Mr. KLOVSTAD. I am not technically qualified to answer that, but from what I have read it would appear there are such processes.

Senator MALONE. You know if it could not be beneficiated they would not buy it?

Mr. KLOVSTAD. That is right.

I tnink it is the only basis they should buy it on.

Senator MALONE. Do you not know that that is a fact?

Mr. KLOVSTAD. I don't know that is a fact. I am not technically qualified to say, but I think from other testimony it will be brought out that it can be upgraded.

Senator MALONE. You are about to say that if you have to beneficiate this ore that you are out of the picture.

Mr. KLOVSTAD. No, I would not say so. No, I think it can be beneficiated.

Senator MALONE. Some of us are under the impression that if the bill goes through this committee, and the Senate floor and is passed by Congress, a simple extension of the act of operation, you may not have too much trouble with it.

Mr. KLOVSTAD. I think it is best to attempt to put through what can eventually be approved.

Senator MALONE. Thank you.

That is all I have, Mr. Chairman.

The CHAIRMAN. Thank you, Mr. Klovstad.

Mr. REDWINE. Mr. Chairman, Mr. Preston and Mr. Graham were unable to remain for the hearing today. May I ask that a telegram from Mr. Graham be inserted in the record at this point?

The CHAIRMAN. Without objection the telegram may be included in the record at this point.

(The telegram referred to is as follows:)

HARRISBURG, PA., *April 21, 1956.*

The COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
United States Senate Office Building.
(Attention Hon. James E. Murray, chairman report delivery.)

Sorry that we could not stay for the extended hearings on manganese Saturday, April 21. After meeting with your committee and staff members for 2 days, offer congratulations regarding their sincerity, integrity, and support given to vital issues and every individual who chose to be heard on pertinent subjects. Their approach and appraisal is truly American.

Both Mr. Preston and I solicit your continued understanding and support of our mining interests and the communities to which they are so vital. An extension of time for the purchase program through June of 1961 will be an expedient and substantial help during which time we should be capable collectively of devising a static formula.

E. DAVID GRAHAM,
National Manganese Co., Inc., Box 248, Marion, Va.

Mr. REDWINE. Mr. Dugger.

STATEMENT OF GEORGE W. DUGGER, ATTORNEY, COLITZ MINING CO.

Mr. DUGGER. Mr. Chairman, my name is George W. Dugger. I am from Elizabethton, Tenn. I appear as an attorney for the Colitz Mining Co., and also in a dual capacity as a citizen interested in the development of the mining industry in our area.

I have been connected with the manganese industry since 1943. A group of friends and I bought controlling interest in a lead, zinc, and manganese mine, a mineral interest of 13,000 acres. We learned the hard way and lost money in mining manganese because we could not get the proper technical advice in processing the ores and when the war ended we found ourselves $600,000 in debt and the premium price plan was off on lead and zinc.

We sold our timber and our surface rights and managed to hold our mineral rights.

Last year we sold them and the company is now mining manganese on the land that we owned.

In dealing with the Government agencies I was impressed with the lack of information that could be obtained on the scientific mining of manganese and processing of the ores and then we found also real hostility toward the mining of manganese in our area.

We were told that there was no manganese there of commercial value.

Now, I would not want to reflect on the kind men of the agencies because there are many hard rock miners there that are sincerely interested in developing the domestic mining program of this country, but there are some there who are not interested.

It is very difficult to encourage operators to come into the area when you find a hostile attitude in the Government because we had the experience of trying to salvage our property and we were thwarted on every hand by the information coming out of Washington.

The manganese has been mined in northern Tennessee for 100 years, but up until recently, until this present program went into effect, practically the only mining that was done is what we call wheelbarrow mines or 20 to 30 feet underground.

Since this program was established we were able to get the Colitz Mining Co. anthracite miners from Pennsylvania, to come into the area and they started operations in building their plant in January 1954.

Last year they mined approximately 10,000 tons of high-grade manganese.

The General Services say that many cars that were shipped from there were much higher grade than manganese that is imported.

Yet we had been told that we only had low grade manganese.

As Mr. Lacey said, and I think Mr. Adkerson has information here, that from Tennessee in 1955 approximately 17,000 tons of high grade manganese was shipped because of the present mining program sponsored by the Government. Now we have found that up until the present time from 30 to 50 percent of the ores are wasted, go into the sluice pond because there was no scientific information on the proper treatment of these ores.

This company that I represent now has a heavy medium plant and they are separating the impurities from the ores through a heavy medium process and also using tables, the first time I know of in any of the area that tables have ever been used to treat manganese, the fines of manganese.

This company also has mined from 1 acre approximately 6,000 tons of manganese averaging approximately 48 percent. They have done this because they have brought heavy equipment into the area, 3½-yard drag lines and stripped down to 250 feet.

Yet we were always told that the manganese was near the surface.

The point I would like to make is that if this program can be extended and the mining industry can be given free range to use American ingenuity, they will discover methods of finding the ore which is not known now and will improve the methods of processing it until we in our area can have a real mining industry of manganese.

This company is located in Johnson County, Tenn., near the Virginia and North Carolina lines. It is the strongest Republican county in the United States, the home of Congressman Carroll Reece, a former national chairman of the Republican Party.

The only industry that this country has is manganese; there is a manufacturing plant there employing only a few people. The other industry is farming and because of the mechanization of farms, we have a large surplus of labor that needs to work in the mining industry.

In my opinion, if this manganese program can be extended for, say, 5 years, so as to justify the operators in spending a little money for research and putting in proper processing plants, we can have a permanent industry and the cost of production can be reduced considerably.

At the present time, there is no such thing and has not been a manganese industry in the southern Appalachian areas.

These short periods of time, of emergencies, where they encourage operators to get into business, only gets the small operator in trouble and leaves him with a loss of capital and wastes this precious material because they do not have time to plan their processing plants so as to conserve it. I know that this committee from hearing the conversations here, is looking to a long-range program. That is what is needed, but we cannot have a long-range program if we stop the present program because then we have to start all over again and this program ends June 30, 1958.

No operator can start now and get ready. He would be crazy to try to get in the business now unless he has some assurance that he can recoup his investment.

In this county there are approximately three hundred people employed in mining manganese. If this program is not extended, they will lose their means of making a livelihood, the only thing they can do is to go to some of the larger industrial areas to obtain employment because there will be nothing there.

The farms, because of mechanization, cannot employ this surplus labor.

So I am interested from that standpoint in seeing that this program is extended .

There are other companies besides the companies that I represent that are producing high grade manganese in the area and with a long-range program I feel that an industry can be set up there and what we know about the manganese of that area that we didn't know 2 years ago convinces me that we have enough reserves there that will carry on the mining industry from 50 to 100 years, yet in 1946 the agencies here said we only had 1,200 tons.

This 1 mine that has taken 6,000 tons out, it is estimated they can see there up to 10,000 more tons in this 1 acre.

And there have been high grade deposits located in other areas, but it takes money. It takes heavy equipment to produce manganese at this depth, to strip from 200 to 300 feet. And the high grade ores are at depths, not on the surface. That is where the impurities are. Most of the impurities that we have in our manganese down there is iron and silica.

The industry is solving the problem of separating this now and by extending this program it will be completely solved and there will never be another statement that there is low grade manganese ore.

Now, as to the low grade ores, it is true that the little miner cannot put these processing plants in, but private industry will put them in and the little wagon miner can still mine his ore and haul it and sell it to the processing plants if this program is extended.

But if it is cut off, it will be just like it was in World War I, World War II, everyone will be discouraged and the Government agencies will still say there is no manganese of commercial value in the southern Appalachian areas.

There is another thing I would like to pay my respects to. Some of the larger companies are going to foreign countries because they can get cheap labor and are shipping the ores back into this country and depriving our people of a livelihood.

But in this country you can take all the capital to some country and under slave wages produce ore and put our people out of work and break the men who have the ambition to get into the mining industry.

I say, gentlemen, it just is not fair.

The CHAIRMAN. Thank you for your very excellent statement, Mr. Dugger. I think most of the points you have raised can be applicable to various sections of the country.

Mr. DUGGER. Absolutely.

The CHAIRMAN. I know it would apply in Montana. I certainly appreciate your statement.

Thank you, Mr. Dugger.

Mr. DUGGER. Thank you very much.

Mr. REDWINE. Mr. Clay Sanford, please.

STATEMENT OF CLAY H. SANFORD, REPRESENTING SOUTHERN MANGANESE CORP., OF BLAND COUNTY, VA.

Mr. SANFORD. Mr. Chairman, gentlement of the committee, I am Clay H. Sanford, representing Southern Manganese Corp. of Bland County, Va.

In April 1955 there were six bills presented before this committee, they are as follows: H. R. 3126, H. R. 3315, H. R. 3381, H. R. 4230, H. R. 4374, and H. R. 5221.

All of these bills were vetoed by the President.

At these hearings there were also statements from J. Carson Adkerson, president of the American Manganese Producers Association; Orville E. Sellers, representing Arkansas; W. Lunsford Long, from North Carolina; Charles W. Massie, representing the Commonwealth of Virginia; Al Stovall from Phoenix, Ariz., and E. V. Mendenhall, from Manganese Corporation of Arizona, and others.

Their testimony cited out the needs, whys and wherefores that this Government should have a continuation of a manganese program so that it would be assured of self-preservation and independence.

The only low-grade ore depots are all located in the western part of the country, which does not give the eastern part of the country a chance to develop and carry on a manganese program with private capital.

It has always been the opinion of all of the committee that all of the ore is in the western part of the United States. If there was a low-grade buying station for the Appalachian area, then there would be some reason to develop and to go forth into the program.

Tennessee, Carolinas, Virginia, Georgia, and Maine, have a quantity of low-grade managanese, which comes just under the present specifications for shipping to high grade depots which on the average will run about 38 percent metalix manganese, silica aluminum about 20 percent, and about 1 percent phosphorus and other elements.

It takes time, lots of hard work and determination to even try to stay in the managanese program that is being carried on now. This program should give the Appalachian area the same benefits that were given to the western area to start off with.

If the western part of the country had not had a low-grade depot, I doubt if there would have been any manganese business there today.

Yet in the Appalachian area we have approximately 12 companies which have shipped 70,000 tons of ore in high-grade stockpiles and they are throwing away 400,000 tons of low-grade ore which could be made into high-grade metalix manganese.

There are about six known processes that low-grade ore can be beneficiated till it will come above specifications for the high-grade ore program.

Private capital can be raised to put in beneficiation plants to recover ore provided you had a program, we would go along with you long enough to get a return back of your money.

A program like this would take 10 years so that you would be about to get your money back from investments.

I have worked with flotation during this past winter and know that the majority of low-grade ore in the Appalachian area can be recovered in this process.

Why not keep some of the billions of dollars in this country to help secure this Nation within her own territory instead of giving away to foreign countries? Let's take care of home first, and then help the other fellow.

The CHAIRMAN. Thank you very much for your excellent statement.

I suppose you would like to ask some questions, Senator.

Senator MALONE. I see no reason to ask questions of this man. He has made a perfect witness.

If you had a principle laid down by Congress, years ahead where your price would be automatically made up, whether by duty, tariff, or guaranties, you would be in business, would you not?

Mr. SANFORD. That is right.

Senator MALONE. That is all there is to it. You have made a good witness.

Mr. REDWINE. Mr. Gemmel.

I understand Mr. Gemmel is gone.

Is Mr. Bush in the room yet?

Mr. Styskal?

The CHAIRMAN. I might say that any witnesses that are absent will have a right to file statements at any time within the next week or two.

Senator MALONE. And any witnesses can add to their statements.

The CHAIRMAN. Yes, any witness who has already testified may make an additional statement to us, if he wishes.

Mr. REDWINE. Mr. Sheinbridge or Mr. Pace.

Mr. PACE. Mr. Scheinbridge is not here, and I have nothing to add.

Senator MALONE. Would you like to present a statement for the record?

Mr. PACE. I will check on that, sir.

Mr. REDWINE. Mr. Adkerson.

STATEMENT OF J. CARSON ADKERSON, PRESIDENT, AMERICAN MANGANESE PRODUCERS ASSOCIATION

Mr. ADKERSON. My name is J. Carson Adkerson. I am president of the American Manganese Producers Association.

Mr. REDWINE. May I interrupt?

Mr. Adkerson, we know that you usually have quite a volume of material. Will you highlight your material and then file it for the record?

Mr. ADKERSON. I will be glad to, yes.

I appear in behalf of the association and myself as an individual operator in manganese.

The association was organized in 1927, composed of the manganese producers in the United States, for the express purpose "To further the production, beneficiation and use of domestic manganese bearing ores."

It is well recognized that manganese has been looked upon as strategic mineral No. 1 since World War I. It is absolutely essential in steel and without manganese there could be no steel.

We normally import about 90 percent of our needs.

During the year 1955 we consumed 2,400,000 short tons of manganese ore. We produced 286,000 tons of manganese ore in the United States, or approximately 12 percent of our needs.

Imports during 1955 amounted to about 2 million tons.

The States producing manganese ores in 1955 were: Montana, 105,000 tons; Nevada, 100,000 tons; Virginia, 35,000 tons; Arkansas, 21,000 tons; Tennessee, 17,000 tons; and all other States 5,000 tons, making a total of 286,000 short tons.

I want to emphasize that we use 2,400,000 tons. So we have a long way to go to meet our needs for manganese.

Manganese rests in a category all its own. From the 2 million tons imported last year, the bulk of it came from India, the next largest quantity came from Africa, and then from Brazil, Cuba and other countries.

Outside of Cuba and Mexico, most of the others are long sea hauls which could be cut off overnight.

Under the buying program that has been started by the GSA in 1952, for high-grade ore, which I will emphasize first, we have shipped cumulatively from 1952 to March 31, 1956, a total of 143,597 long tons.

Under the program of high-grade ore for GSA we have shipped from 1952 to March 31, 1956, 143,597 long tons when we consumed 2,400,000 short tons a year.

So that is evidence within itself of the time it takes to develop manganese, even when we are called upon to produce it in an emergency. If we wait until an emergency comes, or war starts, it is too late.

Under the buying program for low-grade ore there were three stockpiles. One was a Wenden, Ariz., an allocation of tonnage, 6 million units. That has been filled and closed during the year 1955.

The other one is a Deming, N. Mex., allocation 6 million units. That has been filled and closed during the year 1955.

The other one is Butte and Philipsburg, Mont., allocation, 6 million units. Up to March 31, 1956, we have shipped 2,184,000 long ton units, making a total of 14,489,000 units, long dry ton units in the 3 stockpiles on low-grade ores.

If I may say for the record, a unit is 22.4 pounds.

Now, under the GSA buying program for high-grade ore the following States are the largest shipping States in the various regions and have shipped as follows:

Region 3, Virginia, the largest State, has shipped 71,000 long tons.

Region 4, which is Tennessee, has shipped 15,000 long tons.

Region 7, which is Arkansas, has shipped 36,000 long tons.

Region 8, which is New Mexico, has shipped 5,841 long tons.

Region 9, which is Arizona, has shipped 12,727 long tons.

Region 10, which is Montana, has shipped 2,075 long tons, making a total of 143,000 long tons shipped from all States under the GSA buying program.

I want to emphasize here, as has been emphasized before, as I understand, the ignorance or the lack of knowledge, or the hostility toward manganese reserves and resources in the United States. They have said we have no manganese to amount to anything in the Appalachian area.

They refused to give low-grade stockpiles for the Appalachian area and Arkansas, with repeated statements to the effect that "there is little or no manganese in the Appalachian area and that what little is there is of poor quality and no commercial value," and I quote from the reports of the ones who made the investigations as Government witnesses.

Now, may I say, to emphasize what has been done in these two States alone, Virginia and Arkansas have shipped more high-grade ore under the GSA carlot program than all the other States in the United States put together. Under this program they have shipped three times as much as all the other States put together, when even up to recently the emphasis was that there was little or no manganese there.

That goes to emphasize what can be done under the buying program, which is now in operation and which should be continued.

We have the manganese here, in the West as well as in the East. We have manganese in 27 States. I will not read the States here, but I will submit for the record a statement that during the years 1941 to 1945 manganese ores were actually shipped from 27 States in the United States.

Now, that means that increased shipments can be expected from those States as soon as conditions warrent and justify the installation of equipment necessary to raise the grade of the ore.

One of the reasons why the development of manganese has not proceeded in the United States has been deliberately on account of Russia. That is one of the things that first brought me to Washington. We were developing manganese and building plants at immense cost, with millions involved, and each time we would get up to the point where we were ready to ship we were faced with the dumping of Soviet ores in the United States.

I called to the attention of the Congress and the Nation the fact that Russia was dumping manganese ore not for trade, but to prevent the development of manganese deposits in the United States.

As far back as 1927 I called attention of the country to the fact that the time would come when Russia would refuse to ship us any manganese at all.

No one paid any attention to it, but that has now come to pass.

At the time of the Korean war Russia withheld all shipments of manganese ore to the United States, and practically none has come in from Russia since.

We are now leaning on India. India, the same as Russia, could go out overnight.

Since we produce only about 10 to 12 percent of our needs, there is no mineral as important or that needs this extension of the program more than manganese.

The main thing I want to say to you is to congratulate and thank this committee for these hearings. I want to congratulate and thank the staff of this committee for the work that they are doing in bringing the facts to the attention of Congress and the country.

It is one of the best hearings I have attended regarding strategic minerals for some time, and I want to thank the committee and thank the members of the staff for what you are trying to do. I hope that the program will be extended, both in high grade and low grade.

We certainly hope and insist that it be extended for high grade now

with a long-range program to include low grades and give us an opportunity to expand.

I have a short statement here which expresses the facts of the industry. I would like to submit that for the record. I shall be glad to answer any questions.

The CHAIRMAN. The statement will be carried in full in the record.

(The statement referred to is as follows:)

STATEMENT OF J. CARSON ADKERSON, PRESIDENT, AMERICAN MANGANESE PRODUCERS ASSOCIATION

My name is J. Carson Adkerson. I am president of the American Manganese Producers Association and appear in behalf of the association, including myself as an individual operator in manganese. The association is a natural organization composed of manganese producers in the United States. It was organized in 1927 for the expressed purpose "to further the production, beneficiation, and use of domestic manganese-bearing ores."

Since World War I manganese has been known as the No. 1 strategic mineral. It is essential in the manufacture of steel. There is no known substitute for manganese. Without manganese there can be no steel. We use only 14 pounds of manganese in a ton of steel but without that 14 pounds our steel mills would close.

We now consume approximately 2,400,000 short tons of manganese ore a year and produce around 286,000 tons or 12 percent of our needs. Imports in 1955 were approximately 2 million tons.

All shipments of high-grade ore (over 35 percent manganese) from mines in the United States during year 1955 (preliminary figures)

	Short tons
Montana	105,280
Nevada	100,800
Virginia	35,840
Arkansas	21,280
Tennessee	17,920
All other States	5,600
Total	286,720

Production of high and low grade manganese ores under the GSA buying program are as follows:

Low grade cumulative to Mar. 31, 1956

[Long dry ton units of 22.4 pounds]

Wenden, Ariz. (stockpile closed in 1955)	6,108,316
Deming, N. Mex. (stockpile closed in 1955)	6,205,580
Butte and Philipsburg, Mont	2,184,950
Total	14,498,846

High grade (carlod) cumulative to Mar. 31, 1956

Principal shipments from—	Region	Long tons [1]	Principal shipments from—	Region	Long tons [1]
Virginia	3	71,037	Arizona	9	12,727
Tennessee	4	15,100	Montana	10	2,075
Arkansas	7	36,817			
New Mexico	8	6,841	Total		143,597

[1] Based on 43 percent manganese.

It takes years to develop mines, build plants and bring forth production of manganese. After a war starts it is too late. The only time to develop manganese production is during peacetime when time, manpower, and materials are available.

During the years 1941–45 manganese ores were shipped from mines in 27 States in the United States as follows:

Alabama	Minnesota	South Carolina
Arizona	Missouri	South Dakota
Arkansas	Montana	Tennessee
California	Nevada	Texas
Colorado	New Mexico	Utah
Georgia	North Carolina	Virginia
Idaho	Oklahoma	Washington
Massachusetts	Oregon	West Virginia
Michigan	Pennsylvania	Wyoming

Shipments from mines in some of the areas were of course small, but the record shows the widespread occurrence of domestic manganese deposits. Continued production from any of these localities may be expected as soon as conditions justify the expenditures necessary for installations to raise the manganese content of the ores.

Beginning with World War I we have been through three war periods with consequent shortages of manganese. We barely squeezed through with our manganese supplies. The next time it could be fatal. The costs of obtaining overseas supplies during a war, with the cost of the Navy and Air Force in guarding the movements of ore and the loss of ships and seamen, is an entirely different figure than the price paid to the producer.

Oliver C. Ralston, Chief Metallurgist of the United States Bureau of Mines, testified before the Senate Interior and Insular Affairs Subcommittee on April 12, 1955, to the effect that for manganese "in wartime we can afford four times the price you normally pay" in order to get the necessary supply.

During each emergency, domestic manganese producers have been called upon to develop and produce. Each time when the emergency was over and the situation had eased, the rug was pulled from under the producers and we were left holding the bag.

Under authority granted by Congress in the Defense Production Act of 1950, as amended, the General Services Administration, in order to stimulate developments in the United States, is now buying high-grade manganese ores from small producers at a price of $2.30 per unit (22.4 pounds), 48 percent metallic manganese base, in carload lots, f. o. b. any small producer's shipping point.

Under the GSA purchase depots for low-grade manganese ores (15 to 40 percent manganese) were established at Wenden, Ariz.; Deming, N. Mex.; and Butte-Philipsburg, Mont.

Notice has already been served on the industry that when the existing purchase programs end there can be no extension under present laws and regulations. The depots for purchase of low grade ores at Wenden, Ariz. and Deming, N. Mex. have completed their allocations of 6 million units each and were closed in 1955.

Domestic manganese producers are fearful of making further investments in mine developments.

Although it is understood the GSA recommended a purchase depot for low-grade manganese ores in the Southern Appalachian area, there is no such depot east of the Mississippi and none in the Batesville-Ozark region, even though under the GSA buying program for high-grade ore Virginia and Arkansas have shipped three times more than all other States combined.

It is vital to the economic welfare and security of the Nation that the domestic manganese purchase programs be extended and expanded.

I recommend full consideration and early passage of legislation of the nature proposed in S. 3453, S. 2876, S. 3523, S. 3636, and other similar bills now before this committee.

I thank you.

The CHAIRMAN. Do you have some questions, Senator?

Senator MALONE. Yes.

Mr. Adkerson, you have made a fine witness, as you always do. I recall I met you in 1927. I am familiar with your work. You have confined your work entirely to manganese while I was spreading mine over a large area.

While you are emphasizing national defense, are there not many areas in the United States where manganese furnishes the economy of the communities and the counties and the areas where they are located, just like textile mills and agricultural production in other areas?

Mr. ADKERSON. That is true. In Montana it has been true as has been emphasized by several of the witnesses before the committee.

It is true in New Mexico. It has been emphasized in two counties in Tennessee, and it is true at a number of points in the United States.

Senator MALONE. I know you have been a student now since 1927, and that is about 35 years, I guess. That is a good deal in any man's lifetime.

What is the world price and guaranteed price under which you are operating now under the Malone-Aspinall Act?

Mr. ADKERSON. The world's price today is $1.25 a unit delivered at Atlantic seaboard, the duty to be added. The duty is one-fourth cent a pound of metallic manganese contained, which makes the price in the United States about $1.30 a unit.

The price under which the Government is buying it now is $2.30 a unit. There is a difference of $1 per unit.

Senator MALONE. What do you think would happen to the world price if we went out of the manganese business entirely?

Mr. ADKERSON. Well, as has always happened, the world price goes up.

Senator MALONE. It takes what the traffic will bear?

Mr. ADKERSON. Yes.

Senator MALONE. So, as a matter of fact, the consumer does not benefit and the only way to hold the world's price down is to be in production in this Nation so that they know they have to hold it under the domestic price to sell it?

Mr. ADKERSON. It has been spasmodic. Whenever the domestic inductry would get to the point where it was threatening, the Soviet imports have served to put us out of business and after going out of business the price is up again.

Senator MALONE. Now, the next question: You are entirely familiar with the quantity of manganese used in steel. It varies with the grade of steel, but the average is 12 to 14 pounds per ton of steel manufactured?

On the average, then, considering 14 pounds, what difference in the

price of a ton of steel would be made on the market to the consumer by that extra $1 per unit for manganese?

Mr. ADKERSON. That extra dollar per unit for manganese in ore would add to the cost of a ton of steel ingot 62½ cents a ton.

Senator MALONE. I understand they are going to put it up about $10 a ton now and it has been jumped from $2 to $5 recently. It would be almost impossible to find it in the cost of steel.

Mr. ADKERSON. It is almost insignificant for this reason: When they lift the price of a ton of steel they usually lift it $5 to $6 or $7 a ton. We figure that the United States could be made independent of foreign sources of manganese, not suddenly, but over a course of time, at the difference of a dollar per unit in the cost of manganese in ore, which would increase the cost of a ton of steel only 62½ cents per ton.

It is so small and would be so simple to accomplish that it is ridiculous why it is not done.

The chief argument has been first that we did not have the reserves here.

Next we did not have the processes here.

Those arguments have been exploded. We have the reserves; we have the processes; all we need is a continuous market at a fair price to justify the expenditures to go in to make the United States independent of foreign sources of manganese.

As this evidence here shows, 143,000 tons developed over a period of years, it takes time to develop and it takes money to develop it. It can be done if we are given the market for a long enough time to justify the expenses and the development.

Senator MALONE. You are familiar with the fact that the Cuyuna Range low-grade deposits have now become available because of new processes?

Mr. ADKERSON. Yes; they have billions of tons of low grade manganese ores. I don't say that, lightly spoken.

Senator MALONE. Our Senate report indicates there are 2 to 4 million tons there already prospected, 10 to 12 percent ore.

On this business of spasmodic injections of life in the industry through these special bills which we have considerable difficulty in getting through Congress and signed, always have, the business practically goes to nothing between bills, does it not, between acts of Congress?

Mr. ADKERSON. Ups and down, spasmodic, and then dead.

Senator MALONE. Now, could you bring about this condition of self-sufficiency or even close to self-sufficiency under these spasmodic bills every 3 to 5 years?

Mr. ADKERSON. No; it cannot be done because your investment goes in. You close your mine, your mine collapses, and then you start all over again.

Senator MALONE. Then what you have to do is to have some principle established by Congress, whether it is the principle along the lines of the Malone-Aspinall Act, or these other bills that have been introduced, all pointing to the same objective, which would simply say without limit of years that until Congress establishes a new principle these ores will be accepted on this basis and the price being the difference, roughly, between the wage standard of living here, and

the taxes and costs of doing business and the chief competing nations which you estimate as $1.

If a principle of that kind instead of a limit of 2, 3, 4, or 5 years which has been discussed here were passed by Congress, or a duty as the Constitution calls for, or tariff, is established on a flexible basis as it is in the 1930 Tariff Act, to make up that difference, adjusted by the Tariff Commission, would either of these principles laid down by Congress do the job?

Mr. ADKERSON. As long as we are assured of a fair market without the threat of the Soviets, for instance, to dump and to put us out of business, we can go forward.

Senator MALONE. There is introduced, and I suppose it is in the Senate Finance Committee, of which I am a member, a bill that would repeal this 1934 Trade Agreements Act and would go back to that principle laid down in the Constitution, with the Congress regulating the foreign trade and the national economy, and the Tariff Commission under that proposed act, as an agent of Congress, is instructed to determine that difference in this price brought about by this dumping or any subsidy that a foreign nation might put on it.

They have full authority to take cognizance of all these matters, even the manipulation of their money value in terms of the dollar and allow them even to go to the extent of putting on quotas, if necessary, to meet this dumping situation.

Would a bill of that kind, with Congress laying down that principle, do the job?

Mr. ADKERSON. I think it would be helpful, by all means, but there is nothing as helpful as these programs you have now actually buying the ores, because the producer then knows what he can sell it for and he knows the specifications under which he can sell it and the only thing that is lacking is a long enough range program and large enough tonnage to give him an inducement to put in an investment and to make the developments to ship this ore.

Senator MALONE. Now, we do not hope to get a bill through of that length of time because we are still pounding at this closed door, but what would be that length of time, 15, 20, 25 years, to become self-sufficient?

I would not say self-sufficient. You would not have to be, but to produce two-thirds or 50 percent?

Mr. ADKERSON. Fifty percent.

Senator MALONE. How much time?

Mr. ADKERSON. I have estimated we could increase our tonnage production, that given an objective we could increase at a rate of 100,000 tons each year until we could meet the consumption needs of the United States.

Senator MALONE. That would take about 20 years to do the job.

Mr. ADKERSON. Now, under the present program we are increasing it about 100,000 tons a year. It cannot be done overnight. It cannot be done in 1 year's time to meet the needs of the United States and there is no use to hold out hopes that it can be done.

But it can be done, an increase in production at the rate of 100,000 tons each year, until the present needs of the United States are filled.

Senator MALONE. That would mean each 10 years you would increase it a million tons?

Mr. ADKERSON. Yes.

Senator MALONE. And you would need 2 million more and so in 20 years you can do the job.

Mr. ADKERSON. That is approximately correct.

Senator MALONE. What you need is the complete confidence of men in the business who have to go out and raise money and say to a stockholder, "You can't lose on this if I am right in my calculations on the process and the amount of manganese available in this deposit." He has to say that, does he not?

Mr. ADKERSON. Yes.

Senator MALONE. He can only say that if he knows he can repay the cost to the stockholders and pay interest on the money and make a reasonable profit; is that correct?

Mr. ADKERSON. That is correct.

Senator MALONE. That would take a much longer period of years than we are proposing in any of these bills. It would take 15 to 20 years.

Mr. ADKERSON. That is correct.

Senator MALONE. What you are saying, and what I say all the time, and I think I speak for most of the committee, in that regard, these bills are makeshift bills, that is all they are. That is all the Malone-Aspinall Act was; it was a shot in the dark that nobody understood very well.

It passed Congress and was signed. So we are producing so much tungsten now it is a problem to get rid of the domestic production at the price and up above the world price to pay that extra labor cost in this country and the taxes and so forth.

So it was so successful it is hurting the program. You will be doing that in a few years if you have a long enough program, you think?

Mr. ADKERSON. That is true.

Senator MALONE. Now, Mr. Chairman, I think Mr. Adkerson has made his usual good statement. I hope we pay attention to it.

Mr. ADKERSON. Now, regarding these bills, I would like to make a statement regarding the bills. All of them have the proper objective. We hope something will be done which will meet the objective to continue the program. That will include both the high grade and low grade programs.

Now, under this omnibus bill, as we call it, the question is raised there, and rightfully so, about the market price for the ore. The bill says it has to be sold at the open market price and that the evidence has to be submitted to the Secretary of the Interior in order to get the bonus.

Now, it has been our experience in the domestic manganese industry that we have never gotten the open market price. The steel people have never paid the domestic producer the same price as they pay the foreign producer.

One of the reasons for it is that there are only a few buyers of the ore. Those buyers are the manufacturers of ferromanganese and those same buyers are largely interested in foreign deposits. They ship their own ore in and they do not buy the domestic ore themselves except at a price lower than what they are paying for the foreign ores.

And any bill put through here should bear that in mind so that we are not again made the victims of the consumer who will buy or not buy as he sees fit.

The chief reason why this program is now helping the domestic producer is the fact that the producer knows what he is going to get for his ore. He knows what analysis he is going to ship under, and he can make his plans accordingly.

It is a guaranteed market at a guaranteed analysis which helps, and I hope that will be continued so that we are not at the mercy of another buyer.

It can probably be worked out, but that is one of the most essential things in any of the legislation put through to see that we are not at the mercy of the consumer and the buyers as we have been so much in the years past.

Senator MALONE. Now, Mr. Adkerson, a simple extension of the act you are now operating under would fill the bill.

Mr. ADKERSON. It would help tremendously.

Senator MALONE. You mention the low grade. If it is a long enough period so that a custom mill can be built in an area and there is a reason for it and it can be amortized then the small producer of low-grade ore would have a market, would he not?

Mr. ADKERSON. That is right. With the exception of the Appalachian area and Arkansas.

Senator MALONE. If they had mills and if there was a long enough period for enough ore to be purchased, then there no doubt would be an outlet.

Mr. ADKERSON. That is correct.

If they have an outlet for ore at the present time. We are shipping high-grade ore there, but we have to throw aside our low grade. There is no low-grade market for low grade as there is in the West.

Senator MALONE. Then either a buying depot or custom mill, a long enough period or enough ore to justify a custom mill or stockpile, would do the job?

Mr. ADKERSON. That is right.

In other words, a market for the ore.

Senator MALONE. I think that is all.

Mr. ADKERSON. I want to emphasize this, too, which is important to the committee.

As the witnesses before me have testified, where they were shipping low-grade ores to the stockpile in the West they now have installed plants and you will see a tremendous expansion of the production of high-grade ore from the Western States which have been shipping low-grade ore to the low-grade stockpiles.

Now, that is a further incentive under the program to install machinery and do development work to proceed with the developments.

There was a gentleman before the committee last night from Arizona. He testified that although they had their plant operating, they have not even put housing around it and they are faced with that situation right now, of putting a roof on the mill and housing around it, because within 2 years the program will end.

Why go to that and why go to that expense? If we are going to do it, let us do the thing right.

There is such a chance for expansion in manganese it seems foolish to end this program when it is becoming successful, just the same as the tungsten program. They all said there was no tungsten in the United States.

We are penalized by success. As we go ahead, for Heaven's sake let us keep these programs going because it does mean a lot to the Nation, not only to the national defense, but from the standpoint of economics.

This is true not only in manganese, but in other minerals as well. From the research of the Raw Materials National Council, of which I happen to be president and one of the founders in 1936, we find that each dollar of raw material income produced as new wealth from the United States gives 5 times, or $5, as national income.

So you get back every dollar you spend.

It is not a cost to the Nation. It is an investment which pays dividends.

I hope that this committee will look into that further because, to emphasize, it is not a cost, it is an investment which pays dividends.

Senator MALONE. Could you submit for the record the result of that study?

Mr. ADKERSON. I will be glad to.

(The matter referred to is as follows:)

The following tabulation shows the average trade turn of $1 of raw material income into $5 of national income as labor and capital are applied to our production, processing, and distribution of new wealth.

Total value of raw material production and percentage of national income

[Billions of dollars]

Year	National	Gross farm	Gross mineral	Total mineral and farm	Year	National	Gross farm	Gross mineral	Total mineral and farm
1929	87.8	13.832	5.888	19.7	1943	170.3	22.870	8.072	30.9
1930	75.7	11.420	4.765	16.2	1944	182.6	24.113	8.417	32.5
1931	59.7	8.378	3.167	11.5	1945	181.2	25.323	8.141	33.5
1932	42.5	6.400	2.462	8.8	1946	179.6	28.967	8.896	37.8
1933	40.2	7.050	2.555	9.5	1947	197.2	34.002	12.484	46.5
1934	48.9	8.465	3.325	11.8	1948	221.6	34.520	15.766	50.3
1935	57.0	9.585	3.650	13.2	1949	216.2	31.763	13.648	45.4
1936	64.9	10.627	4.557	15.2	1950	240.0	32.066	15.412	47.5
1937	73.6	11.185	5.413	16.6	1951	277.0	36.944	17.880	54.8
1938	67.8	10.037	4.363	14.4	1952	290.9	36.842	17.263	54.1
1939	72.7	10.426	4.914	15.3	1953	305.0	35.430	18.650	54.0
1940	81.6	10.920	5.614	16.5					
1941	104.7	13.707	6.878	20.6	Total	3,476.4	493.464	209.756	703.8
1942	137.7	15.592	7.576	27.2					

NOTE.—Gross farm production 14.2 percent of national; gross mineral production 6.04 percent of national; combined total raw material production 20.26 percent.

Senator MALONE. Now, you said 27 States have already produced manganese under this act.

Are there not some Eastern States and Middle Western States included in that list?

Mr. ADKERSON. Yes; if you care to, I will read them.

Senator MALONE. Just submit it for the record.

Mr. ADKERSON. It is in the record. That is the actual record from the Bureau of Mines showing shipments from 27 States during the years 1941 to 1945.

Senator MALONE. There were some Eastern States?

Mr. ADKERSON. Yes, sir.

Senator MALONE. Are you familiar with the fact that India stopped shipments of monazite which were indispensable to the United States in peacetime?

Mr. ADKERSON. I am not familiar.

Senator MALONE. We found that we had monazite lands in other areas which we neglected to develop because of their availability in India. There is no reason why India could not stop the shipment of manganese ore at this time, is there?

Mr. ADKERSON. There is no reason. There are a lot of rumors and likelihood she might for the reasons she states. Rumors come out repeatedly that they are building steel plants in India and India threatens to withhold her shipments in order to have her minerals for here own steel industry.

Senator MALONE. That would be another reason, probably, too; to make a sale for their steel.

I had four and a half hours with Nehru in his own office in 1948. I made this trip pretty well over India. I am here to say to you—there will be a report on this for this committee that will include this area—India is bound to be under the influence of Russia the same as Cuba is under the influence of the United States and for the same reason, adjacent.

Now, Afghanistan is the same thing. Poor little Afghanistan cannot do anything else. It is a thing that we do not seem to comprehend. Our people who say you must help our allies by buying all this material may have a point that it will help them, but it also destroys us, our economy and our national defense, but I deplore this fact that it is on the matter of national defense whether an industry is allowed to survive in this country, or not.

Now, that is all, Mr. Chairman. I think Mr. Adkerson has made his usual good statement.

The CHAIRMAN. Yes, he has made a good statement. I have been following your views for 20 years, ever since I have been here. I have had my education on this subject from you. I see you almost every year.

I appreciate the contribution you are making here this morning.

Mr. ADKERSON. Thank you, Senator Murray. We want to thank you and all the members of this committee, for the full consideration that you are giving this subject.

I feel confident that something worth while will come out of it. We hope the buying programs will be extended.

Senator BIBLE. Mr. Chairman, I have no questions except to say I am sorry I was unable to be hear earlier to hear these witnesses. I am sorry I did not hear Mr. Adkerson's statement on the subject of manganese, but I assure you I will read the record in this regard in complete detail.

Senator MALONE. Mr. Adkerson, you have seen Senate Report S. 1627 of the 83d Congress?

Mr. ADKERSON. I certainly have, and I certainly want to congratulate you for getting that report out. There is valuable information in that report.

Mr. ADKERSON. Thank you.

Mr. REDWINE. Mr. Myers.

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STATEMENT OF DAVID G. MYERS, OWNER, PIEDMONT MANGANESE MINES, LYNCHBURG, VA.

Mr. MYERS. Mr. Chairman, my name is David G. Myers, from Lynchburg, Va., owner of the Piedmont Manganese Mines, near Lynchburg.

I want to say first that I want to thank these gentlemen for the time and the work they have done to try to help the manganese industry in America. I am especially interested in bill S. 3523, which is a good manganese bill and will certainly make this country independent of foreign ores if it is carried through.

I think we all know and I think all the manganese producers in America know that the high-grade ore is limited as far as large deposits go, in America.

However, we have unlimited amounts of ore which is called low grade simply because it does not carry the metallic content by volume, but it can be beneficiated and brought up to the standards required by the ferromanganese plants in America.

My experience in manganese dates back 40 years. We had one of the best producing mines in the United States. We shipped out of this mine over 30,000 tons of high-grade manganese ore that is 45 percent and better.

When the program started under the Defense Production Act of 1950 I was the only man in the Piedmont section of Virginia that endeavored to interest the Government in assistance in producing manganese under the Defense Act. Dr. James Boyd testified in front of the House committee at the time Mr. Lemke was chairman, that every known deposit of manganese had been inspected in the United States and that there were very few deposits of commercial value.

I insisted that Virginia had manganese of commercial value; that at that time the Government needed it very badly.

Senator BIBLE. Mr. Myers, do you have all this history development in any type of statement that we can furnish for the record?

Mr. MYERS. Yes, sir.

Senator BIBLE. I think we would like to have you highlight your reasons for some type of legislation to help the manganese industry and just point to the bill and make such suggestions as you have. We will not preclude you as to time.

I am wondering if we could not shorten up the testimony and have you indicate the bills that you are for.

Mr. MYERS. Now, the bill, as far as the development of manganese, is absolutely necessary if we want to obtain capital to operate these mines. Nobody is going to put money in something unless he gets a return on it.

Senator BIBLE. I think the committee is very well aware of that.

Mr. MYERS. Now, in our section the deposits of ore vary greatly. The type of ore in southwest Virginia is entirely different from the ore found in our county. Ours is turned up on edge and goes down.

The engineers from the Bureau of Mines made reports that you would not get any good manganese after you get to the water level. Our water table is 70 feet. We have mined this manganese straight down already for 216 feet; 150 feet under water.

There is where your best concentration is, and your best grade of ore.

Mr. Adkerson here, I think, started working the manganese business on this property I am speaking of now.

I think the bill that they have now has done a wonderful thing for the producers in America.

Senator BIBLE. Do I understand that your position will be that you will favor either the extension of the Malone-Aspinall bill, or 3523?

Mr. MYERS. Either one of them that will guarantee the producer in America a chance to make some money without losing money.

Mr. MYERS. I am confident that this committee will follow the suggestions of these people who have made statements, and will put in a manganese bill.

I do not believe that the administration will veto it.

Senator BIBLE. Thank you very much.

Are there any others in the room who care to testify?

If not, the meeting will stand in recess.

The understanding will be that the record will be kept open for, I would think, 10 days for revision of statements that have been made or for filing of any statements.

The committee will be in recess until Wednesday morning at 10 o'clock to hear the Government witnesses. I think we are hopeful that they will have something concrete to say.

Senator MALONE. Senator Bible, I think you have done a good job, you and also the chairman of the committee. I think it is fine.

(Thereupon, at 11:45 a. m., the subcommittee was recessed, to reconvene at 10 a. m., Wednesday, April 25, 1956.)

EXTENSION OF PURCHASE PROGRAMS OF STRATEGIC AND CRITICAL MINERALS

WEDNESDAY, APRIL 25, 1956

UNITED STATES SENATE,
SUBCOMMITTEE ON MINERALS, MATERIALS, AND FUELS,
OF THE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D. C.

The subcommittee met, pursuant to recess, at 10 a. m., in room 224, Senate Office Building, Senator Alan Bible, presiding.

Present: Senators James E. Murray, Montana (Chairman); Alan Bible, Nevada; William Laird III, West Virginia; George W. Malone, Nevada, and Frank A. Barrett, Wyoming.

Present also: Robert W. Redwine, assistant committee counsel, and George Holderer, committee engineer.

Senator BIBLE. The Subcommittee on Minerals, Materials, and Fuels, will come to order.

The record will note the presence of Senator Barrett.

Likewise, we will have the record show that Mr. Laird is here.

When we recessed the hearing of this subcommittee last Saturday morning, it was recessed until today for the purpose of hearing Government agency witnesses in respect to the series of mineral bills that we are considering.

Now, today, we will hear the representatives of the Commodity Credit Corporation and of the International Cooperation Administration.

Now, as a matter of convenience for other Government agencies, we will not sit tomorrow and probably not too long today because we have been advised by them that they may need more time in which to prepare their testimony and the presentation before this committee.

So when we recess today it will be over until some time early next week, probably Tuesday, Wednesday, or Thursday, depending upon the availability of the necessary Government witnesses to round out this minerals hearing.

This morning our first witness is Mr. T. R. Rawlings of the Commodity Credit Corporation.

Mr. Rawlings, we are happy to have you with us.

Mr. REDWINE. Mr. Chairman, may the record show that Mr. Rawlings, and also the representative of the ICA, when they appear before us in response to a request from the chairman of the committee, as a usual thing they do not appear in connection with mineral matters.

However, the committee would like to hear, Mr. Rawlings, from your agency the extent to which the barter of agricultural products for minerals has gone. Quite a breakdown would be desired on that

as to the amount of minerals, the amount of agricultural production from the countries from which these minerals have come, and so forth.

I think the witness has a prepared statement, Mr. Chairman.

Senator BIBLE. It may be understood that the prepared statement will be reproduced in the record in full and we are very happy, Mr. Rawlings, to have you develop the testimony, either by reading your prepared statement or highlighting it, whichever you prefer.

Mr. REDWINE. Mr. Chairman, may I further say this, that I think in this particular case it is going to require a good deal of questioning to bring out what the committee wants to know and may Mr. Holderer, our staff engineer, ask most of the questions on behalf of the staff?

Senator BIBLE. Certainly. He is entitled to ask questions. He is a staff member. We are very happy to have Mr. Holderer develop the subject.

You may proceed, Mr. Rawlings.

STATEMENT OF T. R. RAWLINGS, DIRECTOR, BARTER AND STOCKPILING DIVISION, COMMODITY STABILIZATION SERVICE, UNITED STATES DEPARTMENT OF AGRICULTURE

Mr. RAWLINGS. Thank you very much, Mr. Chairman.

If I may, sir, I would like to read this. I don't think it is too long.

Senator BIBLE. I think it is the proper approach to set the stage for the questions.

Mr. RAWLINGS. The barter program of the Department of Agriculture, the objective of the barter program is to furnish an additional avenue for the export disposition of CCC-owned agricultural commodities through exchanges on an equivalent value basis for either strategic materials or other materials, goods, and equipment for Government agencies.

Such exchanges are effected through United States firms using private trade channels in fulfillment of a contract with the CCC covering the transaction.

Legislation: In barter, CCC-owned agricultural commodities are exchanged for durable, less-costly-to-store, foreign-produced, strategic materials and for other materials, goods, and equipment needed by Government agencies.

To this end, the Congress authorized barter under the CCC Charter Act of 1948—Public Law 806, 80th Congress—as amended in 1949, Public Law 85, 81st Congress.

Subsequently, barter provisions were included in the Agricultural Act of 1949, Public Law 439, 81st Congress, and in the Agricultural Act of 1954, Public Law 690, 83d Congress.

Finally, the Agricultural Trade Development and Assistance Act of 1954 contained a barter provision in title III, Public Law 480, 83d Congress.

This latter legislation directed the Secretary of Agriculture to maximize the barter of CCC-owned agricultural commodities for materials, goods, and equipment needed by other Government agencies and for CCC's account.

Further, this legislation also directed other Government agencies to cooperate with the Secretary in barter.

Administration policy on barter: It is the policy of the administration in line with legislative authorities cited to increase exports of

agricultural commodities by the development of increased foreign purchasing power through barter for foreign-produced strategic materials and other materials, goods, and equipment required by other Government agencies.

The barter program is of particular significance in view of large stocks of agricultural commodities held by the CCC, storage costs alone amounting to approximately $1 million per day.

Barter contracts: Under the present barter program, the first barter contract was signed March 10, 1950. In the 5-year period to fiscal year 1955, barter contracts negotiated totaled $107.6 million.

Under the expanded barter program brought about by increased concern over CCC inventories of agricultural commodities on the part of both the Congress and the administration, barter contracts negotiated totaled $281.8 million for fiscal year 1955 alone.

In fiscal year 1956 through February 29, barter contracts negotiated totaled $130.7 million.

Commodity exports: Exports of agricultural commodities necessarily follow contracts negotiated. For the early 5-year period commodity exports totaled $107.6 million. In fiscal 1955, commodity exports lagged behind contracts and totaled $124.6 million.

Commodity exports in fiscal year 1956 through February 29, 1956, totaled approximately $180 million.

Under the expanded barter program, grain, the leading surplus, has consistently accounted for the largest part of such exports with wheat exported under barter accounting for approximately one-fifth of all United States wheat exports in fiscal year 1955.

Material imports: Under the barter program strategic materials have accounted for almost 90 percent of materials contracted for. Strategic materials are being acquired under barter both for the national stockpile and for CCC's account. Most of the strategic materials delivered for CCC's account through February 29, 1956, totaled $51.5 million, as follows:

Antimony metal, $1 million;
Beryl ore, $0.1 million;
Cadmium, $3.3 million;
Industrial diamonds, $19 million;
Ferrochrome (high carbon), $3 million;
Ferrochromium-silicone, $1.6 million;
Ferromanganese, $18.5 million;
Fluorspar, $1.9 million;
Crude iodine, $0.1 million;
Managanese ore, $0.2 million;
Palladium, $2.8 million.

Future of barter: While barter is now recognized as an established export program, its role in the future is a question of many facets. Important considerations include legislation, policy, national stockpile needs, and the degree that various United States Government agencies use barter to procure materials, goods, and equipment.

Against such uncertainties, the record shows that barter is feasible; that it involves a minimum of Government participation in trade, and that it is effective in securing the export movement of CCC-owned agricultural commodities in the face of stiffening competition in the world market.

Senator BIBLE. Mr. Rawlings, for my information, and for the record, how do you arrive at the values placed on these imports of strategic minerals?

Mr. RAWLINGS. Sir, we insert them at the price or exchange value on which we accepted them, which is not more than fair market value as determined through a service agreement or recommended by the Emergency Procurement Service, with whom we work as an operating agency.

Senator BIBLE. Now, could you spell that out a little more clearly? Take antimony, for example. You say that in materials delivered for your account through February 29, 1956, antimony was roughly a million dollars.

When you enter into this barter agreement, do you arrive at the value as of the day you entered into the agreement, or as it fluctuates in the world market throughout the period of time?

Frankly, this is a new deal for me, and I am interested in developing the record as to how you arrive at these values.

Mr. RAWLINGS. If I may, I would like to give a brief summary as to how we receive an offer.

Senator BIBLE. Yes.

Mr. RAWLINGS. For instance, we have a list of materials which changes from time to time. Those materials are recommended to us as being desirable to procure by the Office of Defense Mobilization.

A firm will make us an offer on a quantity of antimony at a specific price and with a delivery schedule. Since we have no materials experts in the Department of Agriculture and there has been no desire of the Department to set up an entirely new organization which would parallel the stockpile authorities and the General Services, who procure under the policy of ODM, we, through a service agreement, work closely with that organization and use their materials experts.

Senator BIBLE. That is with GSA.

Mr. RAWLINGS. Emergency Procurement Service of GSA; yes, sir.

In this case the man makes an offer of antimony with a certain delivery period at a certain figure per hundred pounds; we refer that offer by cover letter to the Emergency Procurement Service and ask them to advise us whether that offer is considered acceptable and that includes the price.

They follow the same policy that they do in their own procurement; that is, they will not pay more than fair market value.

Senator BIBLE. How do you determine fair market value?

Mr. RAWLINGS. We don't determine. We ask their recommendation.

Senator BIBLE. How do they determine that? Is that the world price of metals on the London market?

Mr. RAWLINGS. I assume it is the world market. The only thing I can say is that I know of no case where we have accepted materials or they have recommended acceptance that is more than E. & M. J., and I would say that 99 percent is quoted Engineering and Mining Journal prices.

It is my feeling in working with them that they evaluate that at what they figure they can buy it for.

Senator BIBLE. In exchange for this million dollars of antimony, you barter a million dollars worth of wheat; is that correct?

Mr. RAWLINGS. That is right. At that time we do not specify whether it should be wheat. What the offerer does, he agrees to take a

million dollars worth of agricultural commodities over an extended period of time, usually paralleling the delivery time of the strategic material.

That is just a general rule of thumb.

For instance, since wheat is a daily quoted item and changes from day to day, he agrees to accept the agricultural commodity at the export market price as determined by the Commodity Credit Corporation during the life of the contract. He has the right to try to make a sale and get a price from us and try to make a sale and that is firm against his contract.

The valuation or exchange value which you might call price, which we place on the agricultural commodities, is identically the same price that we offer commodities for sale.

It is on a quid pro quo basis entirely and there is no cut rate in the barter.

Then we get this advice back from the Emergency Procurement Service and they say the price is satisfactory, if the material is for the stockpile, then they approve the price because that will be transferred to them later and we transfer the commodity to them at that price.

If it is something that we are going to take for our own account and will not go to the national stockpile, then they make a recommendation as to price, which will be the same price either way.

Then we proceed to accept the man's offer by telegraphic acceptance. As soon as he confirms we proceed to write a contract and get whatever technical assistance we need from the Emergency Procurement Service in writing all the details and specifications.

Incidentally, all the strategic materials we acquire have to meet the specifications of the national stockpile. All the nonstrategic materials we may acquire for Defense or International Cooperation Administration has to be satisfactory as to the specifications and the terms and conditions which they set out for acquiring that.

All of this is handled through United States firms. Obviously, if you contracted with a foreign firm and you got into legal difficulty, you might not get too much redress in a foreign court.

Now, all the agricultural commodities may be exported by the contractor to any friendly country. It must be exported.

And the strategic materials that we accept are only from friendly foreign countries. We will not take anything from the Soviet bloc or Soviet-dominated countries.

That gives you some idea.

Now, if they want to move the agricultural commodities ahead of the delivery of metal they have to furnish an irrevocable letter of credit to cover the value of the commodities. As strategic and other materials are delivered that letter of credit is reduced.

Senator BIBLE. Who specifically determines the need for the strategic materials in Washington?

Mr. RAWLINGS. Since we have no experts in the Department of Agriculture, we have relied upon the Office of Defense Mobilization to determine the materials and the quantities that we may accept, and that is sent, as what you may call a barter-procurement directive, to the Emergency Procurement Service of GSA, who transmits that to us and we operate from that because the Secretary of Agriculture, as I said before, felt that he does not want to get into this field.

Senator BIBLE. So the determining agency is ODM?

Mr. RAWLINGS. They are the policy one, both for EPS and us. We are the operators.

Senator BIBLE. Thank you, Mr. Rawlings.

Senator Laird, do you have any questions?

Senator LAIRD. Do the items enumerated under "material imports" on page 3, constitute all of the items classified as strategic materials contracted for?

Mr. RAWLINGS. No, sir; they do not. They only represent the materials that have been delivered for CCC's account, which at this point do not look as though they will be transferrable to the national stockpile.

Under Public Law 480, title III, the Secretary was directed to acquire nondeteriorating and less costly to store strategic materials for agricultural commodities which naturally deteriorate faster. That is the part and authority we use for acquiring them for our own account.

We have listed those.

Now, there are other strategic materials which we have acquired, but I have not included them here because the quantities of those materials are classified as going to the national stockpile. They do include a number of these materials, incidentally.

There are a few more that we have gotten for the stockpile. For instance, we have acquired silk for the stockpile. We have acquired iodine. Those materials have gone to the stockpile, but they do not necessarily meet—for instance, silk costs as much to store as cotton does.

Senator BIBLE. Do you acquire tungsten under your barter program?

Mr. RAWLINGS. We have never acquired tungsten because the ODM in making their deliberations, deductions, as I understand, their requirement for the domestic mobilization base and the part that barter gets would be above whatever they have there or in their own Government programs for acquiring tungsten; they take that into account and we get the increment, that is above, unfilled.

Senator BIBLE. Are there any further questions?

Senator LAIRD. No, sir.

Senator BIBLE. Senator Barrett.

Senator BARRETT. Mr. Rawlings, do you know what negotiations were made with Turkey sometime back with reference to the disposition of the wool stockpile, or some part of it, for strategic materials?

Mr. RAWLINGS. Yes, sir; we worked on that transaction for a number of months. Since our policy is to trade only through private United States firms, the firm that made the offer of the Turkish chrome for the wool was unable to furnish what we considered satisfactory financial guaranties, the same as we had required for the four-hundred-odd-million dollars of materials that we had acquired up to that time.

Senator BARRETT. Did you have some assurance on that transaction that the Turkish Government would stand back of the transaction?

Mr. RAWLINGS. There were some assurances, sir, but on the other hand, we felt that if we were going to deal directly with the Turkish Government—and, incidentally, all of our barter transactions are through the private trade and not through the Government—then we would not have needed at all to have dealt with a private firm.

Senator BARRETT. It strikes me that you are placing some undue restrictions on your activities in that regard that the Congress never imposed upon you and you are making it more difficult to get rid of these surplus stocks than you are required to do.

I think we would accomplish more from the Government standpoint if we get rid of these surpluses. If you fellows are going to sit on there and not make any effort to get rid of them and say "We have to get gold for this stuff," we will never get rid of them.

Mr. RAWLINGS. Sir, we had the title I program which made sales for foreign currencies. I understand quite a bit has gone to Turkey.

Senator BARRETT. That is right; they do that right along, as far as that is concerned. Nobody criticizes that. I do not know why you fellows have to be so squeamish when you get an opportunity to get rid of some of these surpluses and say, "Well, we have to go to the Federal Reserve Board and see if this is something that is up to par with Treasury requirements," or something in that order.

I do not approve of that policy. I think what we have to do is to exercise a high degree of latitude and get rid of these surpluses, No. 1, and No. 2, get the best deal we can in return.

We are giving away billions of dollars; are we not?

Mr. RAWLINGS. Well, the other programs carry that.

Senator BARRETT. I know that, but where does the money come from? Does it not come out of the same pocket down here in Mr. Humphrey's department?

Mr. RAWLINGS. Yes, sir; but under Public Law 85, amendment to the Commodity Credit Corporation Act, it specifically states that preference should be given to private commercial trade channels.

Now, if you make requirement and all other firms can meet those conditions and that is proven by the fact that we have moved up to that time over 400 millions and then one firm——

Senator BARRETT. How much wool have you moved?

Mr. RAWLINGS. We have not moved any wool through barter.

Senator BARRETT. Do you think it is a good idea to get rid of these stockpiles or not?

Mr. RAWLINGS. Yes, sir; certainly I do.

Incidentally, I think we are going to move some under coming current contract, but we are working it another way and chrome would come from Turkey.

Senator BARRETT. The question is when. We want to do it before the end of the century. That is what we are after. We want to get this work done immediately.

I tell you I am very unhappy about the way this program has worked out down there. I think you can do a lot better than you have done. I do not mind telling you that. I think you are way too slow.

I think you could make these deals right and left. I do not believe that the Congress or the President, or anybody else, would criticize you for proceeding here with dispatch and making the best deals you can and get rid of these surpluses and get the best return we can from them.

Mr. RAWLINGS. Sir, I think we are making every effort to do that, but the barter program is synchronized or coordinated with the other disposal programs. That is the way we have attempted to handle it.

We are getting quid pro quo back under the barter program.

Now, the sale of foreign currencies, I will let somebody else have an opinion on that. We have ICA, which is furnishing money to them.

Senator BARRETT. Now, the sale to get foreign currency, what does that amount to? We get the foreign currencies, what do we do with them?

Mr. RAWLINGS. That is a different program.

Senator BARRETT. It is the same Treasury that puts up the money?

Mr. RAWLINGS. That is true.

Senator BARRETT. When we get these foreign currencies we give them away.

Mr. RAWLINGS. The law provides it and I would rather for the person who is responsible for that program to answer that question.

Senator BARRETT. I know that. I am talking about the overall program now. You have to do something for the people in this country, too. We have to look after them a bit. We have these surpluses down there.

If you can get rid of them, no matter how you get rid of them, it will do the farmers of this country a lot of good.

That is what I am interested in. And also it will do the best we can for the Treasury in getting back the best return we can get.

Now, if you are going to insist on a gold-bond transaction, you are not going to get rid of any of these stockpiles to amount to anything.

I do not think you are proceeding in the right manner. I do not mind telling you that. I think you are trying to be too businesslike on those transactions.

Mr. RAWLINGS. Sir, on that particular transaction after we terminated negotiations with this firm which, as I recall, had virtually no assets to attempt to swing a deal that runs that much, we talked to the Turkish commercial attaché and intimated that we would consider any proposal that he might have and he has not been back.

Senator BARRETT. I tell you what I would do; I would give the blooming wool to the Turkish Government. That is what I would do. We are giving them a lot of other aid.

I would as soon keep the dollars and give them the wool.

Mr. RAWLINGS. If you are going to do that, I think the better vehicle would be to work through the channels of ICA or title I.

Senator BARRETT. We should work through some channels and get rid of this stockpile. I do not think we are proceeding in the right fashion.

It seems to me you ought to get rid of these surplus farm commodities in a more expeditious fashion some way or other. I, of course, think you ought to proceed to get the best deal you can. I know you turned that deal down there, and we did not get rid of some 15 million pounds of wool that we could have under this transaction.

I know that the ICA has spent a lot of money over there and a lot of dollars went in at the same time. Maybe we could not have transferred the ICA dollars over to Agriculture, I do not know, but I am pretty sure that some deal could have been made with the Turkish people, either the Government or the people, to take some of that wool because they wanted it.

I understand there is another proposal coming up here for some kind of transaction.

Mr. RAWLINGS. That is true. It has not come in yet. They have talked to us about it.

Senator BARRETT. Now, did you examine the sections in the farm bill with reference to the transfer of barter materials to the supplemental stockpile, section 305 (a)?

Mr. RAWLINGS. Yes, sir; I am familiar with it.

Senator BARRETT. Does that meet with your approval?

Mr. RAWLINGS. Yes, sir. The administration, as I recall, recommended that section 305 (a).

Senator BARRETT. That is the way I understood it. For that reason I introduced a bill yesterday that has the same identical language that it has. I am very much interested in this thing, Mr. Rawlings. The fact that I am talking a little rough here today does not mean that I am criticizing you too much, except that I think some way or other we have to find some way of loosening up a lot more on this business down there and doing a better job of getting rid of these surpluses.

I think it would be dollars in our pocket if we can get those surpluses out of the way. I want to tell you why.

Just keeping that stockpile of wool down there, 120 million pounds of wool in your Commodity Credit has cost the Government $25 million the last year. So, in the first place, the wool was a threat over the market and it depressed the prices of the growers and it increased the payments under the incentive plan to the growers by about 100 percent in my judgment.

I believe if we had the blooming stockpile out of the way that the growers would get a better price and the requirements on the Treasury would be decreased at least by $25 million. That is my guess about the matter. That is why we have to find some way to loosen up this deal and accomplish two objectives:

No. 1, get rid of all of the surplus stocks that we want to get rid of, and, No. 2, get the best deal we can get for them in exchange.

That is the way I feel about it.

Mr. RAWLINGS. Sir, the only way I feel on that particular one, we did work longer on that transaction than any other barter transaction I worked on at the time of the program, and the performance record and the quality of material on the chrome side was very bad; it did not come up to our expectations.

Senator BARRETT. I realize that.

Mr. RAWLINGS. We are hoping now that this new proposal from a different source, that it may lend some benefit to us.

Senator BARRETT. I realize everything you say. In an ordinary business transaction I would back you up 100 percent, but I do not think that is the policy we ought to proceed on with reference to the disposition of these stockpiles down there.

I think we have to make the best deal we can make and get rid of them.

As I have tried to indicate to you in my opinion we will be dollars ahead if we can get them cleaned up and get them out of the way.

The fact of the matter is, we dumped 10 times as much material after the war was over in other lines than what we have in this stockpile and nobody said boo. Trucks and guns and planes, and whatnot, were spoiled and thrown away and nobody said a word about it.

If we had kept all that stuff it would have been a threat on the industrial economy of this country. But we are keeping all of the surplus farm commodities here and they are hanging over the market and threatening the farm economy from year to year and we are doing very little about it.

I realize that you have gotten rid of some of these, but, then, you have gotten rid of hundreds of millions. What we have got to do is get rid of billions. That is the whole thing in a nutshell.

Mr. RAWLINGS. I don't have the figures, but I understand that the title I program has made a very marked increase this year and last year they had a sizable figure.

Senator BARRETT. I realize that, but I am very impatient about the thing because I am sure we would be far better off if we took some precipitate action and got rid of them as quickly as possible and got the best deal we could. That is my feeling about it.

Senator BIBLE. Thank you very much, Senator Barrett.

Does the staff have any questions to ask Mr. Rawlings?

Mr. HOLDERER. Mr. Chairman, I have 1 or 2 questions.

Senator BIBLE. Certainly.

Mr. HOLDERER. I believe you stated that you receive instructions from ODM as to what to acquire; is that right?

Mr. RAWLINGS. Yes, sir; in terms of a barter procurement directive.

Mr. HOLDERER. Now, I do not quite understand how a deal originates. ODM tells you that they want chrome, for example, or ferrochrome. Do you shop around to find out who has ferrochrome to trade?

Mr. RAWLINGS. Actually we don't have to shop around. The people are at your door. ODM will give us a list of the items. You can take so much in ferrochrome, or so much in metallurgical chrome. They arrive at that figure because they take into account the domestic mobilization base and other things I have mentioned.

Then they arrive at a quantity, taking into account what are in the stocks and needed in the stockpile and the amount they hope to take from domestic industry, that type of thing, and they give me an increment which they figure can be bartered without harming their whole program and taking into account the domestic industry.

From that we accept offer, timing the market right, in order not to raise prices.

We take into account the domestic utilization of, say, chrome ore by the domestic industry so that we don't go out and barter for more that will increase the price tremendously to domestic users here.

That is the way we try to conduct that. We do this in conjunction with our friends in the Emergency Procurement Service advising us, "now, there is so much here you can possibly take without raising the price of this chrome."

If we see the price is on the upgrade and a lot has been taken by domestic industry, we will pull out and wait a while.

Senator BARRETT. Could you give us a list of the countries from which these materials are obtained?

For example, who would trade ferrochrome, or these other items?

Mr. RAWLINGS. Sir, I think it would be very difficult to give you a list because usually in our contracts we require that it comes from friendly foreign countries. In the case of certain areas, producers of ferrochrome, you would know the country it came from.

If you took some ferrochrome here which had been made with a foreign-produced ore and than you require them to ship in a certain amount of ore to take the place of that if it is already here, because we want to generate foreign purchasing power, then we might know or we might not, because they would not be required to ship to us, but just ship direct and furnish proof of export.

The trouble is we don't have the staff on certain materials.

Like platinum, we require the certificate or origin, where it is from, so that we know it is not Soviet dominated. But we don't have this specific information.

Senator BARRETT. For example, take ferromanganese and ferrochrome, are those items acquired abroad or are they made in ferromanganese and ferrochrome after they get here, being made from the ore?

Mr. RAWLINGS. They are acquired both ways. Primarily they are acquired from abroad.

Senator BARRETT. That is the ferro?

Mr. RAWLINGS. Yes, but in some cases we have taken some domestically produced ferro, but made from foreign ores.

Senator BARRETT. I still do not understand why it would be difficult to know right offhand where the material comes from. There are not too many countries in the world that make ferrochrome or ferromanganese or produce metallic antimony.

As to industrial diamonds, there is only 1 spot in the world, or 2 spots in the world, you get them from. But as to these semimanufactured things, why would it be difficult to know right off the bat where they come from?

Mr. RAWLINGS. Take industrial diamonds, practically all your industrial diamonds are acquired by exporters from the syndicate. It comes from the Belgian Congo or from South Africa.

I would not know, and I don't think they know, actually what is there.

Senator BIBLE. You know it comes from 1 of the 2 places, though?

Mr. RAWLINGS. It could be 10 percent that might have come out of Venezuela.

Now, in the case of your ferromanganese, some of these, some of the bulky items, we could probably give you some information on quite a few of them, but just to get to the last word down, it would be difficult in the manner in which we handle the contract. You could probably get the bulk of it.

Mr. HOLDERER. I think the committee would be interested in knowing where these semimanufactured items come from.

Mr. RAWLINGS. In the case of ferromanganese, to give you an example, we took some from France and we took some from Germany.

Mr. HOLDERER. You know Germany does not produce any manganese.

Mr. RAWLINGS. That is true. I don't know where the manganese came from except they certified that the ore that would be used there would be from friendly countries. I did not try to trace it.

Mr. HOLDERER. Of course, in the case of Turkey, we know that Turkey would not be making ferrochrome.

Mr. RAWLINGS. That is right. In that case it would be probably processed here.

On the other hand, some of the Turkish ore might go to Norway to produce ferrochrome.

Senator BIBLE. Can you supply that for the record to the best of your ability and that of your staff, Mr. Rawlings, in answer to Mr. Holderer, indicating exactly where these strategic materials come from countrywise?

Mr. RAWLINGS. We can do this: We can on delivery, because we know where the shipment came from. We could when the contract is closed out, but if the contract is still running, I might not be able to give it to you.

That is what I was trying to explain. When it comes in on delivery and is inspected you know the source, from the bills of lading, that type of information.

Senator BIBLE. I think what he is asking for is the general picture of the countries from which we receive these processed industrial strategic items.

Mr. RAWLINGS. I think we can furnish a picture for you which might be 80 or 90 percent.

Mr. HOLDERER. Even though the contract is not filled——

Mr. RAWLINGS. In some cases we would know.

Mr. HOLDERER. Whatever is in that contract would likely come from the same place.

Mr. RAWLINGS. That is right.

Mr. HOLDERER. Any one contract would apply to some one country in all probability.

Mr. RAWLINGS. If I may, let me try to supply as total a picture as I can.

Senator BIBLE. I wish you would, Mr. Rawlings.

Mr. HOLDERER. Then one other thing. On this exchange, most of these countries have multiple exchange which is constantly fluctuating. You never know from one day to another what the exchange is going to be tomorrow.

Do you work with the International Monetary Fund to see what rates of exchange is going to be used in the deal?

Mr. RAWLINGS. Ours is fixed on a dollar price.

In other words, a man says he will deliver ferromanganese to meet certain specifications, say, $178, a ton, something like that, and it is fixed on that.

So we don't have to worry about that. That is one of the nice parts about dealing through the United States private trade channels, you don't get into all the ramifications that you might otherwise where you have to worry about your fluctuation of exchange through Treasury; I mean the Federal Reserve changing its ratings.

Mr. HOLDERER. Does ODM take this material off your hands, then?

Mr. RAWLINGS. If we have acquired it under an open quota for the stockpile, then we transfer it to the Emergency Procurement Service of General Services Administration as they have funds to acquire it from us.

If they don't have the funds, we hold it for our own account, physically stored by them through a service agreement.

Mr. HOLDERER. They are the custodians?

Mr. RAWLINGS. Yes, sir; they receive and inspect for us. They accept and they handle all that part.

Actually, we don't have but 30 or 35 people down there. That includes clerks and stenographers. That is a small group because they have the whole organization to handle it.

Mr. HOLDERER. Then I would expect that all of this material would meet stockpile or industrial specifications.

Mr. RAWLINGS. It meets stockpile specifications and that is written in the contract. It has to meet specifications at the time you contract so their inspectors will object to it if it does not meet stockpile specifications in the same manner as they have carried on for years on the stockpile.

Mr. HOLDERER. How is transportation arranged?

Mr. RAWLINGS. We require that to be delivered to the east coast or some point, depending on the contract.

We do not take it overseas unless we are acquiring for their account and the Emergency Procurement Service decides that they prefer to handle the charter of the vessel and in that case it could be taken f. o. b. shipped overseas.

Mr. HOLDERER. What about the nationality of the ships that carry this material? Is there any restriction on that?

Mr. RAWLINGS. Yes. The so-called 50-50 shipment clause applies to all the materials that we bring in. We operate under the terms of that act, I think it is Public Law 66.

Mr. HOLDERER. That is all I have.

Mr. REDWINE. Mr. Rawlings, inasmuch as your arrangement is really one with brokers——

Mr. RAWLINGS. Exporters-importers.

Mr. REDWINE. You really have no way of actually knowing the origin of this except from their guaranty; that is correct, is it not?

Mr. RAWLINGS. That is true. We have no organization to police it. You can see that would be very difficult.

We do have the opportunity of checking through Dun & Bradstreet, our fiscal people, to see the reputable people we are dealing with.

I think that the majority of the people that we have made contracts with are the same ones that in the past have supplied material to the Emergency Procurement Service.

Mr. REDWINE. Where does the broker in a barter deal like this get his compensation? Is it an override that you pay to him?

Mr. RAWLINGS. No, sir. If I knew, I would not work for the Government, I don't think.

On the other hand, naturally he must get some ferro handling material the same as when he sold the stockpile, whatever he could make in supplying it.

If we are the only source, which we are in a number of cases, he is certainly in a bargaining position with the supplier overseas and then in turn he has to move the agricultural commodities.

Usually I think they figure to break even on the agricultural commodities. Whatever profit there is out of the normal process of handling the ore would be what he makes.

Mr. REDWINE. His profit is on the other end of the deal?

Mr. RAWLINGS. I would think so, and also barter is unique in this. Since the agricultural commodities go to many friendly countries and since he may get several suppliers and since he is at liberty to work with foreign currencies on his own, he may be able to buy a foreign

currency at premium and in turn pay that to some foreign supplier who needs that particular currency or he can pay him a premium with excess foreign currency which he has bought cheap, maybe down in South America, or something like that.

There are a number of ways in which they can handle it because it is barter and they have two commodities to work with, but we pay no commissions or premiums, anything like that.

It is never more than the fair market value.

Mr. REDWINE. Will you furnish for the record, Mr. Rawlings, a list of the exporters-importers with whom you have done business?

Mr. RAWLINGS. I will be glad to do that.

(The information requested is as follows:)

DEPARTMENT OF AGRICULTURE,
COMMODITY STABILIZATION SERVICE,
Washington, D. C., May 9, 1956.

Hon. JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
United States Senate, Washington, D. C.

DEAR SENATOR MURRAY: Pursuant to the request of Mr. George B. Holderer, committee staff engineer to our Mr. T. R. Rawlings, during the hearing on April 25, 1956, of the Subcommittee on Minerals, Materials, and Fuel Economics of the Senate Committee on Interior and Insular Affairs, we are forwarding a list of barter contractors and a list on strategic material origins.

The first list attached reports on the United States firms entering into barter contracts with CCC for strategic materials under the expanded barter program, July 1, 1954, through February 29, 1956. This list includes names of the firms, the date the contract was negotiated, and the strategic material involved in the contract.

The second list reports on the status of strategic material deliveries against fiscal year 1955 barter contracts by material, quantity, and country of origin as of September 30, 1955. This list is limited to fiscal year 1955 contracts with a cutoff date of September 30, 1955, since the origin of materials can only be determined after shipping documents have been received and processed. As pointed out in the hearing on April 25, 1956, this necessarily results in a considerable lag in developing information on the origin of materials. However, the list does indicate the general sources of strategic materials acquired through barter. You will also note that both lists include only those barter contracts amounting to $1 million or more which accounts for approximately 90 percent of the value of all barter contracts negotiated for strategic materials.

Permit me to take this opportunity to express our appreciation for the privilege of appearing before the Senate Committee on Interior and Insular Affairs and for the interest shown by the committee and staff in the barter program of the Department.

Very truly yours,

WALTER C. BERGER,
Acting Administrator.

United States firms entering into barter contracts with CCC for strategic materials under the expanded barter program, July 1, 1954, to Feb. 29, 1956 [1]

Contractors by fiscal year	Contract negotiation date	Strategic material
FISCAL YEAR 1955		
1. Baker & Co., Inc.	Aug. 3, 1954	Platinum.
2. International Bartering Co	Oct. 8, 1954	Industrial diamonds and boart.
3. Do	do	Do.
4. Leon Templesman & Son	do	Diamonds.
5. Diamond Distributors, Inc	Oct. 14, 1954	Do.
6. Meade Industrial Diamond Corp	do	Do.
7. Frisch Industrial Diamond Corp	do	Do.
8. Rough Diamond, Inc	Oct. 21, 1954	Do.
9. Philipp Bros., Inc	Nov. 16, 1954	Chrome ore.
10. M. Golodetz & Co	do	Do.
11. Philipp Bros., Inc	Nov. 23, 1954	Platinum.
12. United States Industrial Diamond Corp	Dec. 14, 1954	Industrial diamonds and boart.
13. Continental Ore Corp	Dec. 15, 1954	Ferrochrome.
14. Calabrian Co., Inc	Jan. 15, 1955	Do.
15. Philipp Bros., Inc	Jan. 13, 1955	Do.
16. M. Golodetz & Co	Jan. 14, 1955	Do.
17. William H. Muller & Co., Inc	Feb. 24, 1955	Do.
18. Philipp Bros., Inc	Feb. 17, 1955	Palladium.
19. Continental Ore Corp	Mar. 2, 1955	Fluorspar.
20. Philipp Bros., Inc	Apr. 12, 1955	Titanium sponge.
21. Frisch Industrial Diamond Corp	Apr. 26, 1955	Industrial diamonds and boart.
22. International Bartering Co	do	Do.
23. Meade Industrial Diamond Corp	do	Do.
24. Rough Diamond Co., Inc	do	Do.
25. Leon Templesman & Son	do	Do.
26. United States Industrial Diamond Corp	do	Do.
27. Continental Ore Corp	do	Ferromanganese.
28. Huxley-Westfried Corp	Apr. 21, 1955	Do.
29. W. R. Grace & Co	May 5, 1955	Cadmium.
30. Associated Metals & Minerals Corp	May 2, 1955	Ferromanganese.
31. Allied Tungsten Co., Inc	May 4, 1955	Do.
32. North American Continental Co	May 13, 1955	Do.
33. Associated Metals & Minerals	May 18, 1955	Fluorspar.
34. M. Golodetz & Co	June 1, 1955	Ferrochrome-silicon.
35. Associated Metals & Minerals	June 17, 1955	Ferromanganese.
36. Do	do	Ferrochrome-silicon.
37. William H. Muller & Co., Inc	June 22, 1955	Do.
38. Philipp Bros., Inc	June 17, 1955	Do.
FISCAL YEAR 1956		
1. Continental Ore Corp	July 5, 1955	Ferromanganese.
2. Mercantile Metal & Ore Corp	July 8, 1955	Ferrochrome.
3. Do	July 13, 1955	Do.
4. Do	July 26, 1955	Do.
5. M. Golodetz & Co	July 28, 1955	Do.
6. Philipp Brox., Inc	Aug. 4, 1955	Do.
7. Globe Metallurgical Corp	Aug. 12, 1955	Ferrochrome-silicon.
8. Continental Ore Corp	Nov. 1, 1955	Rare earth (sodium sulfate).
9. Philipp Bros., Inc	Oct. 31, 1955	Do.
10. National Lead Co	Dec. 5, 1955	Antimony.
11. Continental Ore Corp	Jan. 18, 1956	Ferrochrome.
12. Do	do	Do.
13. Globe Metallurgical Corp	do	Do.
14. M. Golodetz & Co	Jan. 17, 1956	Ferrochrome.
15. Do	Jan. 18, 1956	Do.
16. Wm. H. Muller & Co., Inc	do	Do.
17. Philipp Bros. Ore Corp	do	Do.
18. Do	do	Do.
19. Do	do	Do.
20. Do	do	Do
21. Do	do	Do.
22. International Bartering Co	Jan. 25, 1956	Diamonds.
23. Meade Industrial Diamond Corp	do	Do.
24. North American Continental Co	do	Do.
25. Rough Diamond Company, Inc	do	Do.
26. Leon Templesman & Son	do	Do.
27. Philipp Bros. Ore Corp	do	Ferrochrome.
28. Mercantile Metal & Ore Corp	Feb. 6, 1956	Do.
29. M. Golodetz & Co	Feb. 8, 1956	Ferrochrome-silicon.
30. Frank Samuel & Co., Inc	do	Ferrochrome.

[1] Contracts of over $1,000,000, accounting for approximately 90 percent of the value of all barter contracts or strategic materials.

Status of strategic material deliveries against fiscal year 1955 barter contracts by material, quantity, and country of origin as of Sept. 30, 1955
(excludes barter contracts of under $1 million)

Origin by country	Industrial diamonds and boart	Ferrochrome	Metallurgical chrome ore	Platinum	Ferromanranese	Palladium	Fluorspar
	1,000 carats	*1,000 long dry tons*	*1,000 long dry tons*	*1,000 troy ounces*	*1,000 short tons*	*1,000 troy ounces*	*Short dry tons*
France		.9			2.6		
India					.2		
Italy							9,434
Japan					.2		
Mexico							1,835
Sweden		1.0					
Africa	4,160	1.8					
Turkey			81				
Domestically processed [1]		22.1					
Non-Communist countries				35		60	
Total	4,160	25.8	81	35	3.0	60	11,269

[1] Origin of replacement ore for domestically processed ferrochrome cannot be determined at this time.

NOTE.—All quantities, which are based on operating records, are subject to adjustment upon final accounting.

Mr. HOLDERER. Does there seem to be an abundant supply of these critical materials and minerals that people want to trade for our agricultural commodities?

Mr. RAWLINGS. The only way I can answer that, Mr. Holderer, is that the materials that are short in the national stockpile, such as maybe asbestos and monazite, are still in short supply and we don't have any offers there.

The same material that is in abundant supply when they are dealing with us seems to be in good supply with us, also.

It may be that if the contract with GSA runs out, then, we might be able to pick up materials which we had not been able to pick up before.

But there are some still short.

Senator BIBLE. Thank you, Mr. Rawlings.

There should be inserted in the record an adverse report from ODM dated April 24, on antimony, and an adverse report from ODM dated April 24, on mica.

I ask that these two be incorporated in the record at this place.

APRIL 24, 1956.

Hon. JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
United States Senate, Washington 25, D. C.

DEAR SENATOR MURRAY: This has further reference to your letter of March 16, 1956, requesting our comments concerning S. 3455, a bill to encourage the discovery, development, and production of mica in the United States, its Territories, and possessions, and for other purposes.

This Office is keenly aware of the shortage of mica for strategic and critical applications in wartime and has taken several steps to improve the supply situation. A domestic purchase program which has been in effect for a number of years has brought forward substantial amounts of domestic mica. However, only a small part of this mica meets strategic and critical specifications. The program was initiated under the provisions of the Defense Production Act of 1950, as amended, and will expire on June 30, 1957, or when 25,000 tons of mica have been delivered to the Government purchase depots.

The stockpile objectives for both block and film muscovite mica are far from completion. Because of the continued seriousness of the mica shortage, the Office of Defense Mobilization has recently certified a program for research and development of substitute and alternate materials for natural mica in strategic and critical applications.

S. 3455 would extend the expiration date of the present domestic purchase program to June 30, 1961. It is the opinion of this Office that existing authority provides a flexible tool for undertaking whatever measures may be indicated to acquire our stockpile needs for mica—including an extension of the present domestic purchase program. Accordingly, we do not recommend enactment of S. 3455.

The Bureau of the Budget states that it has no objection to the submission of this report.

Sincerely yours,

ARTHUR S. FLEMMING.

APRIL 24, 1956.

Hon. JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
United States Senate,
Washington, D. C.

DEAR SENATOR MURRAY: This has further reference to your letter of March 23, 1956, requesting our comments on S. 3496, a bill to encourage the discovery, development, and production of antimony in the United States, its Territories, and possessions, and for other purposes.

This bill proposes a domestic antimony purchase program under which the Government would be authorized and directed to purchase up to 10,000 short

tons of domestically produced antimony metal and/or antimony oxide at not less than 55 cents per pound for metallic antimony and 50 cents per pound for antimony oxide.

A substantial portion of the minimum objective has been acquired. In its most recent review of the stockpile objectives in early 1955, the Office of Defense Mobilization, on the advice of the Interdepartmental Materials Advisory Committee, determined that the Government would be able to fill the minimum and long-term stockpile objectives for antimony on schedule without paying premium prices by purchases from existing sources of supply, both domestic and foreign. At that time the market price of domestic 99.5 percent grade antimony was 28. 5 cents per pound f. o. b. Laredo. At the present time the domestic price is 33 cents per pound. The world market price of antimony of 99.6 percent grade is between 28 and 29 cents, including duty, f. o. b. New York.

It was concluded that since antimony oxide could not meet long-term storage requirements, it would be safer to stockpile metal which could be converted at the time of need. Present purchase directives are designed to acquire only such grades of metal as can be converted to oxide, with a preference for domestic material.

In view of the foregoing, it does not appear that there would be any defense justification for an antimony purchase program of the type proposed by S. 3496.

Further, it is our opinion that existing authority provides a flexible tool for undertaking whatever additional measures may be necessary to meet our defense requirements for this material.

The Bureau of the Budget advises that it has no objection to the submission of this report.

Sincerely yours,

ARTHUR S. FLEMMING,
Director.

Mr. REDWINE. Mr. Chairman, due to the complications that you mentioned earlier, in having to shift our schedule around, the ICA is not prepared to appear until 2 o'clock this afternoon.

May we take a recess now until 1:30 or 2 o'clock this afternoon?

Senator BIBLE. Thank you very much, Mr. Rawlings. We will stand in recess until 2 o'clock this afternoon.

(Thereupon, at 11 a. m., the subcommittee recessed until 2 p. m., same day.)

AFTERNOON SESSION

The subcommittee reconvened at 2 p. m., upon the expiration of the recess.

The CHAIRMAN. The hearing will come to order, please.

Mr. REDWINE. Mr. Sweet, please.

Will you come up and have a seat? Will you state your name and the capacity in which you appear?

STATEMENT OF THEODORE L. SWEET, CHIEF, INDUSTRIAL COMMODITY TRADE STAFF, OFFICE OF INDUSTRIAL RESOURCES, INTERNATIONAL COOPERATION ADMINISTRATION, ACCOMPANIED BY ARNOLD RIVKIN, ASSOCIATE GENERAL COUNSEL; AND BENONI LOCKWOOD, JR., INDUSTRIAL ENGINEERING DIVISION

Mr. SWEET. My name is Theodore L. Sweet, Chief of the Industrial Trade Staff, Office of Industrial Resources, ICA.

Mr. REDWINE. Mr. Chairman, Mr. Holderer will start the questioning, if he may, please.

The CHAIRMAN. Very well.

Mr. HOLDERER. Mr. Sweet, the information we would like would be a review of the operations of ICA having to do with the development of the mineral resources in the various countries where you are operating.

Mr. REDWINE. You would like that country by country; would you not?

Mr. HOLDERER. Yes.

Mr. SWEET. Mr. Chairman, I have a statement I would like to read.

The CHAIRMAN. You may proceed.

Mr. SWEET. Mr. Chairman and gentlemen, a letter from a member of your staff requested that the International Cooperation Administration—ICA—provide representation at the subcommittee meeting of April 25 and be prepared to answer questions concerning this agency's mineral programs.

It is our understanding that your subcommittee is primarily interested in programs for the rehabilitation and stimulation of the minerals industries abroad.

First, let us say that we are anxious to cooperate with your committee to the fullest extent, and, accordingly, submit herewith a prepared statement, together with a statistical summary of the projects financed by ICA's predecessor agencies in which the committee appears to be interested.

The majority of these projects were initiated under the strategic materials program by ECA and MSA.

The program received impetus and took on increased significance with the advent of the Korean hostilities, and has not been a responsibility of ICA and its predecessor agencies since November 1951.

At that time the responsibility for initiating and carrying out the program was transferred to the Defense Materials Procurement Agency—DMPA—and subsequently to GSA.

It may be helpful to review briefly the history of the program.

Minerals development programs overseas were as follows—as I said, this is taken from our records because although this was originally started in the old ECA–MSA, it was subsequently transferred to the GSA which has the records today.

So, some of the questions that might come up as to the implementation should be referred to them because they now have the responsibility.

Minerals development programs overseas were as follows:

1. The strategic materials program.
2. The basic materials program.
3. The European industrial projects.

1. The strategic materials program: This program was the largest which ECA and its successor agency, MSA, participated in minerals development overseas. The authority for ECA to undertake this development appears in section 117 (a) of the Economic Cooperation Act of 1948, as amended, which provides:

SEC. 117. (a) The Administrator, in furtherance of the purposes of section 115 (b) (5), and in agreement with a participating country, shall, whenever practicable, promote, by means of funds made available for the purposes of this title, an increase in the production in such participating country of materials which are required by the United States as a result of deficiencies or potential deficiencies in the resources within the United States.

Section 115 (b) (5) provides:

> * * * facilitating the transfer to the United States by sale, exchange, barter, or otherwise for stockpiling or other purposes, for such period of time as may be agreed to and upon reasonable terms and in reasonable quantities, of materials which are required by the United States as a result of deficiencies or potential deficiencies in its own resources, and which may be available in such participating country after due regard for reasonable requirements for domestic use and commercial export of such country; * * *

Early in the life of the ECA's Strategic Materials Division, in addition to the responsibility of purchasing commodities for the stockpile with United States-owned 5-10 percent counterpart funds, it was decided that the developing of mining properties abroad with counterpart funds and dollars payable through shipment of scarce materials to the stockpile, would be a continuing and more effective method of carrying out the mandate referred to in the section 117 (a) quoted above.

There would also be the obvious added advantage to the participating countries in lessening their dependence on Western Hemisphere sources and foreign-aid grants and the advantage to the United States of reducing the drain on its sources of materials. This provided the basis for a program whose first contract was signed in 1949 and continued until November 1951 under ECA and MSA. At that time the Defense Materials Procurement Agency was given responsibility for this function.

The personnel of the MSA Strategic Materials Division, together with the responsibilities for implementing existing contracts, were transferred from MSA to DMPA.

Although DMPA no longer had access to MSA-programed dollar funds, that agency was authorized to use United States-owned 10 percent counterpart currencies for financing development projects and purchases of strategic commodities in addition to its own appropriated dollars. Decisions regarding funds to be used for this purpose were determined through advance programing and negotiations with MSA.

This use of counterpart was terminated June 30, 1953. Subsequently, DMPA was disbanded and the foreign activity unit was transferred to GSA, where it still maintains its identity, supervising the fulfillment of the various contracts.

During the period of April 1948 through June 1953, $23.7 million of ECA-MSA dollar funds and $98.7 million equivalent in United States-owned counterpart were obligated for minerals development projects under the strategic materials program. At the same time, direct purchases of materials for the United States strategic stockpile were made with counterpart in an amount equivalent to $115 million.

In all, a total of 237.4 million in dollars and United States-owned counterpart was channeled into the strategic materials program.

In connection with the strategic materials program, there are a number of important points to be emphasized:

(*a*) Of the total of $122.4 million obligated for development projects, an estimated 85 percent was in the form of loans repayable in materials for the stockpile. In a few cases of unusual importance repayment was on a contingent basis depending on the success of exploration.

(*b*) 13 percent of the contracts contained provisions permitting repayment of advances in materials or cash under certain conditions.

This was particularly true of support projects related to evacuation and transport on materials, e. g., railway-construction, but not directly related to the output of individual mining properties was involved.

(*c*) Two geological surveys and a cobalt project totaling $2.1 million were financed in Portuguese Africa and the United Kingdom Dependent Territories in Africa on a grant basis. The balance of the program was on a loan basis.

(*d*) In the administration of the strategic materials program, ECA-MSA took guidance from the Munitions Board as to what materials and amounts thereof that should be financed for development and purchase for the United States strategic stockpile for security of the United States.

2. The basic materials program: The second method whereby minerals and related projects received assistance was under the basic materials program. This program was authorized under section 514 of the Mutual Security Act of 1951, as amended, which is quoted as follows:

> SEC. 514. In order to reduce the drain on United States resources and to assure the production of adequate supplies of essential raw materials for the collective defense of the free world, the Director for Mutual Security is authorized to initiate projects for, and assist in procuring and stimulating increased production of, materials in which deficiences or potential deficiencies in supply exist among nations receiving United States assistance. There is hereby authorized to be appropriated to the President for the fiscal year 1954 not to exceed $7,500,000 to carry out the provisions of this section.

This provision was supplemented by section 519 (b) of the Mutual Security Act of 1951, as amended, which provided:

> SEC. 519. (b) In order to assist in carrying out the provisions of the Economic Cooperation Act of 1948, as amended, not to exceed 50 million dollars of funds made available under the authority of this act for assistance pursuant to the provisions of the Economic Cooperation Act of 1948, as amended (22 U. S. C. 1501–1522), may be used to acquire local currency for the purpose of increasing the production of materials in which the United States is deficient.

General Foreign Operations Administration, FOA, policy with regard to this program was that private enterprise had ample means to carry out any exploration, development, and equipment of mines, mills, smelters, et cetera.

Nevertheless, the opening up of new and remote areas frequently entailed establishing auxiliary facilities such as powerplants, railways, major-access roads and port and harbor works. These enterprises all call for heavier capital investments and longer periods of time for the recapture of capital than are usually attractive to private investors.

A considerable number of projects were submitted and reviewed by FOA, and eight proposals were financed in fiscal year 1953 and 1954 at a total cost of $28 million, on a loan basis repayable in local currency or, in some cases, in materials at option of United States Government. Each contract under the program was submitted to the National Advisory Council for approval, and interest on the loans were in accordance with rates currently in the country concerned.

The basic materials program was discontinued June 30, 1954.

3. The European industrial projects: During the ECA-MSA industrial capital project program, which amounted to approximately $600 million, for the rehabilitation, modernization and expansion of heavy industry in Europe, several projects in the mineral field were financed to the extent of $13 million.

This included several iron mines, potash deposits in Alsace, and the installation of two aluminum foil rolling mills in France. Although this program has a favorable impact on European industry as a whole, its effect on the development of nonferrous metals was relatively unimportant.

To round out the picture from 1948 through January 30, 1955, it should be noted that ICA and predecessor agencies concurred in the use of approximately $20 million of 90 percent counterpart, local currencies, owned by foreign governments in the metal mining and quarrying industries out of a total approved withdrawals of approximately $10 billion of European counterpart.

That concludes my prepared statement, Mr. Chairman.

This document here is a breakdown of the figures which I have summarized in the statement.

(The document referred to is as follows:)

TABLE I.—*ICA and predecessor agency commitments and expenditures for the development of minerals overseas, by country*

[In thousands of United States dollars or dollar equivalents]

Country	Apr. 3, 1948, to Dec. 31, 1955							Apr. 4, 1948, to June 30, 1955— (F) 90 percent country counterpart funds used for metal and other mining [1]
	(A) Commitments, strategic materials loans			(B) Basic materials program loans, dollars or dollar equivalent	(C) Total ICA loans	(D) Grant aid loans, projects over $1,000	(E) Purchases with ICA local currency funds	
	United States dollars	Local currency	Total					
Algeria		1,500	1,500		1,500			
Austria		897	897		897	3,072		12,000
Belgian Congo	1,550		1,550		1,550			
New Caledonia	843	658	1,501		1,501			
Formosa								
France, Metropole						7,157		2,400
French Equatorial Africa	1,314	3,050	4,364		4,364			
French Morocco	4,175	13,343	17,518	7,537	25,055			
French West Africa				1,430	1,430			
Germany		17,177	17,177	2,381	19,558			
Greece	222	3,238	3,460		3,460			
Greenland-Denmark	25	898	923		923			
Italy		3,278	3,278		3,278			
Jamaica	10,382	10,548	29,930		20,930			
Kenya		112	112	5,704	5,816			
Mozambique-Angola	1,700	1,395	3,095		3,095			
Nigeria								
Northern Rhodesia	560	14,210	14,770		14,770			
Norway	464	9,989	10,453		10,453	3,142		5,300
Portugal	15	1,152	1,167		1,167			
Southern Rhodesia		14,622	14,622	10,000	24,622			
Spain								
Tanganyika	1,640	560	2,200	1,036	3,236			
Turkey	132	61	193		193	990		
Union of South Africa		140	140		140			
United Kingdom		1,757	1,757		1,757			
United Kingdom, various	735	106	841		841			
Other								300
Grand total	23,757	98,691	122,448	28,088	150,536	14,361	115,001	20,000
Expenditures	23,254	97,109	120,363	26,629	146,992		113,929	
Unobligated funds	503	1,582	2,085	1,459	3,544		1,072	

[1] Exclusive of coal mining.

TABLE II.—*ICA and predecessor agency commitments and expenditures for development of minerals overseas, by commodity*

[In thousands of United States dollars or dollar equivalents]

	A. Strategic-materials loans			B. Basic materials program loans	C. Total ICA loans	D. Grant-aid loans		E. Purchases with ICA local currency funds	F. 90 percent country counterpart funds used for metal and other mining [1]
	United States dollars	Local currency	Total	United States dollar equivalents		Projects over 1,000	Paid shipments, construction equipment		
Aluminum									
Asbestos	10,582	28,045	38,627	2,381	41,008	1,516			
Bauxite		103	103		103				
Beryl, mica	120	12,069	12,189		12,189				
Chrome ore and concentrates		92	92		92				
Cobalt	975	2,601	3,576		3,576				
Columbium	560		560		560				
Copper	264	659	923		923				
Copper-cobalt		14,298	14,298	1,430	15,728				
Copper-lead									
Copper-lead-zinc	1,640	560	2,200		2,200				
Diamonds	297	168	465		465				
Fluorspar	1,040	2,905	3,945		3,945				
Lead and lead-zinc		1,297	1,297		1,297				
Manganese	4,292	16,916	21,208		21,208				
Mullite		133	133		133				
Tungsten		112	112		112				
Tin		1,062	1,062		1,062				
Lead cadmium zinc	1,550		1,550		1,550				
		2,278	2,278		2,278				
Subtotal of strategic minerals development projects	21,320	83,298	104,618	3,811	108,429				
Iron ore						9,353			
Other						3,492			
Port and harbor									
Railway construction	900	1,395	2,295	7,880	10,175				
Geological surveys		14,000	14,000	11,867	25,867				
Hydroelectric development	1,535		1,535		1,535				
				4,530	4,530				
Subtotal other projects	2,435	15,395	17,830	24,277	42,107				
Grand total	23,755	98,693	122,448	28,088	150,536	14,361		115,001	20,000
Expenditures	23,254	97,109	120,363	26,629	146,992			113,929	
Unobligated funds	501	1,584	2,085	1,459	3,544			1,072	

[1] Exclusive of coal mining.

Mr. REDWINE. Mr. Sweet, did I understand you when you were reading your statement to say that 95 percent of all these funds were approximately on the basis of repayment through materials?

Mr. SWEET. A very large portion of it is loans.

Mr. REDWINE. A portion of it is loans? What portion was direct grants? We would also like to know what the experience has been on the repayment of loans.

Mr. SWEET. Yes, sir. As I say, we will have to get that from GSA, I mean on the repayment.

Mr. HOLDERER. You do not keep an accounting, yourself, as to how the repayments are coming along?

Mr. SWEET. We receive reports from GSA. We will have to get them.

Mr. HOLDERER. In other words, after the deal is put through, then GSA——

Mr. SWEET. I am talking now about the strategic materials program, the ones that were transferred. The basic materials program was the second one, the one that we still have, which was implemented by the Export-Import Bank to carry on the repayment part. We can get that information. You want us to get the repayment on the loans?

Mr. HOLDERER. Yes.

Mr. SWEET. We will furnish it to you.

Mr. REDWINE. We want those loans nation by nation segregated as to what nations they are in.

TABLE I.—*ICA and predecessor agency repayments of loans for the development of minerals overseas, strategic materials program and basic materials program, by country, April 1948 to Dec. 31, 1955*

[In one thousand of United States dollars or dollar equivalents]

Country	Strategic materials loans, total commitments	Repayment		Writeoff	Loss due to exchange rate	Principal, 90 days or more overdue	Basic materials loans [1]	Repayment	
		Principal	Interest					Principal	Interest
Algeria	1,500	1,500	129						
Austria	897		8		88				
Belgian Congo	1,550	1,550	185						
New Caledonia	1,501	155		1,348					
France, Metropole									
French Equitorial Africa	4,364	414	200	150					
French Morocco	17,518	9,787	2,045				7,535		482
French West Africa							1,430		
Germany	17,177	7,598	1,040			169	2,381	268	284
Greece	3,460	1,059	116	38	983	5			
Greenland-Denmark	923		14						
Italy	3,278	1,699	291						
Jamaica	20,930	5,630	702						
Kenya	112					112	5,704		
Mozambique/Angola ($1,535 grant)	3,095	647	113	1,251					283
Nigeria									
North Rhodesia ($560 grant)	14,770	210	30	560					
Norway	10,453	264	182						
Portugal	1,167	272	28			861			
South Rhodesia	14,622	2,701	818				10,000		184
Tanganyika	2,200						1,036		51
Turkey	193	135	28						
Union of South Africa	140	4	11						
United Kingdom	1,757	175	71			103			
United Kingdom various	841								
Grand total allotments	122,448	33,800	6,011	3,347	1,071	1,250	28,086	268	1,284
Expenditures	120,363						26,629		
Unobligated funds	2,085						1,459		

[1] Coal excluded.

ICA and predecessor agency repayment of loans in the development of minerals overseas strategic materials program and basic materials program,

ICA and predecessor agency repayment of loans in the development of minerals overseas strategic materials program and basic materials program, by commodity, April 1948 to Dec. 31, 1955

[In thousands of United States dollars and dollars equivalent]

Commodity	Strategic materials loans, total commitments	Repayments		Writeoff	Loss due to exchange rate	Principal, 90 days or more overdue	Basic materials loans [1] commitments	Repayments	
		Principal	Interest					Principal	Interest
Aluminum	38,627	9,155	1,499		88		2,381	268	283
Asbestos	103					103			
Bauxite	12,189	4,405	444		303				
Beryl, mica	92	12	5						
Chrome ore and concentrates	3,576	335	47	1,348					
Cobalt (grant)	560			560					
Columbium	923	443	64						
Copper	14,298	210	38				1,430		
Copper-cobalt									
Copper-lead	2,200								
Copper-lead-zinc	465	52	33						
Diamonds	3,945	362	163	150					
Fluorspar	1,297	695	98			50			
Lead and lead-zinc	21,208	11,896	2,276	38	613	197			
Manganese	133	62	7		67	5			
Mullite	112					112			
Tungsten	1,062	273	28			781			
Tin	1,550	1,550	1						
Lead-cadmium-zinc	2,278	1,005	377						
Subtotal strategic materials development projects	104,618	30,455	5,080	2,096	1,071	1,250	3,811	268	283
Iron ore (ECA) industrial project grant									
Other (ECA industrial project grant)									
Port and harbor	2,295	647	113				7,880		407
Railway construction	14,000	2,701	818				11,867		305
Geological surveys (grant)	1,535			1,251					
Hydroelectric development							4,530		289
Subtotal other projects	17,830	3,348	931	1,251	0	0	24,277	0	1,001
Grand total allotments	122,448	[2] 33,803	6,011	3,347	1,071	1,250	[2] 28,068	268	1,284
Expenditures	120,363						26,629		
Unobligated funds	2,085						1,459		

[1] Coal excluded.
[2] Rounded off.

Mr. HOLDERER. Does ODM suggest or approve these strategic mineral projects before they are put into effect, or what part does ODM play in this?

Mr. SWEET. We have not had any since 1951. Munitions Board was the one that had charge of the program.

Mr. REDWINE. ICA is not engaged in this type of work at present.

Mr. SWEET. We have none presently that I know about.

We have technical assistance, that is something else, but no mineral development per se that I know of at the moment.

Mr. HOLDERER. The South African railroad, that came under a previous administration then. I believe we supplied a railroad to the Union of South Africa.

Mr. SWEET. This, I think, is the one you are referring to $14,600,000.

Mr. HOLDERER. Yes.

Mr. LOCKWOOD. That originated in Strategic Materials Program.

Mr. HOLDERER. That would be repayable in copper, or some other mineral?

Mr. SWEET. Yes.

You will have to go back on each individual contract to find out the specific details you wish to know.

Mr. HOLDERER. Is ICA restricted in any way as to the countries to which it can sell surplus commodities, agriculture or otherwise, for foreign currency?

In other words, are you restricted by any act of Congress to those countries in which you may operate?

Mr. SWEET. We are talking now about surplus agricultural commodities?

Mr. HOLDERER. Yes. I imagine that is the only type of commodity that is surplus.

Mr. SWEET. Under section 402, we have a mandate to sell a certain amount of surplus agricultural commodities under our aid program.

Mr. HOLDERER. Are you restricted to any certain countries?

Mr. SWEET. It depends on the appropriations. I am not quite clear about your question.

Mr. HOLDERER. For example, are you limited to certain countries in the European area?

Mr. SWEET. It all depends. Congress appropriates the money for specific purposes for specific areas of the world.

Mr. HOLDERER. Does Congress say you can only make a deal with Spain, Yugoslavia, or West Germany, or France?

Does Congress name the country in which you may operate, in other words?

Mr. SWEET. I am afraid I will have to pass that question to somebody who is more familiar with these details.

Mr. RIVKIN. May I answer that, please?

Section 402 of the Mutual Security Act authorizes us to dispose of of surplus agricultural commodities. Congress makes appropriations. We then provide aid to different countries perennially in the form of agricultural commodities, within the appropriation that Congress makes for a specific country, or as is more often the case, for a particular geographic area.

But there is no other restriction, other than the eligibility of a country to receive aid under the Mutual Security Act.

In short, part of our aid has to be in agricultural commodities and we spell out a program with the different countries to meet the congressional requirement, i. e. within the amount of aid that each country is going to get within the funds that Congress appropriates for a geographic area. Section 402 is a fairly limited program, as you undoubtedly know.

The much larger program is the Agricultural Trade and Promotion Act under which surplus Agricultural commodities are sold by the Department of Agriculture. ICA does, however, negotiate loan agreement with the sales proceeds received.

After the Department of Agriculture has sold the commodities, ICA then negotiates loans to the purchasing countries of the local currency that is received.

The only restriction on the sale of surplus agricultural commodities under this act is that they be sold to friendly countries.

Mr. HOLDERER. Does ICA use foreign currency received from surplus sales to purchase strategic minerals?

Mr. RIVKIN. No, sir. The Agricultural Trade and Promotion Act allows that to be done. The Office of Defense Mobilization would do that by using some part of the local currency proceeds realized from the sale under the act.

But under the Mutaul Security Act, that is not presently done.

Mr. SWEET. Section 104 (b), is that the one you are discussing?

Mr. RIVKIN. It is part of section 104 of the Agricultural Trade and Promotion Act. ICA has no general minerals development program at the present time, and no specific mandate to conduct one.

Mr. HOLDERER. Are foreign funds available to develop and expand foreign mineral resources?

Mr. SWEET. The funds that are received under the Agricultural Trade and Promotion Act could conceivably be used for that purpose and ODM would be the agency that did it if it were done.

Mr. HOLDERER. And I take it that some of that does go on.

Mr. SWEET. That is for purchases.

Mr. RIVKIN. I am not sure it is quite that restrictive.

I don't know that very much development goes on. I do know that they may do a small amount of purchasing. I don't believe it has gone beyond that.

Mr. HOLDERER. It has never been clear to me how counterpart funds work.

Now, in most of these countries there are multiple currencies and the currencies vary almost from day to day. How can you ever put through a deal and know that it stays put when you are dealing with countries where the currency fluctuates as it does in most of them?

Also, how do we acquire these counterpart funds? Do we give them dollars for their local currency?

Mr. RIVKIN. Going way back to the early days of the Marshall plan, ECA, and MSA, counterpart funds were the local currency equivalent of the dollar aid the United States expended.

For example, if we granted $100 million to a country for the import of American commodities, the country would then put up $100 million of their own currency into a fund which would be in the name of the recipient country; however, before the country could use the funds it would have to get the agreement of the United States Government.

The country would deposit the local currency equivalent of dollars at an agreed rate we would agree with it in advance. If the country was a member of the International Monetary Fund it would probably have been the rate declared to the fund. If the country was not a member, it would be some negotiated rate.

Of the countrpart put up by the aid recipient countries, in the very beginning, the United States Government received 5 percent, and subsequently this was increased to 10 percent, for its own use.

It was out of these local currency funds that ECA and MSA purchased a large part of the strategic materials and financed a good many of the materials production projects that we are discussing today.

In a sense, we were getting back, if you like, 5 or 10 percent of the money we granted, in materials.

The strategic materials program was carried on by the Mutual Security Agency until approximately 1952 and then was transferred by MSA to the Defense Materials Procurement Agency.

Then MSA went on a much more limited basis with the basic materials program. This was a dollar program and a local currency program to the extent that we bought local currency with dollars.

Mr. SWEET. Mr. Chairman, I would like to submit this booklet which may shed some light on this.

Mr. REDWINE. Where is the authority for this control in dealing with foreign currencies? Where does that authority come from? Is it in the Defense Production Act, or is it in your act?

Mr. RIVKIN. The early ECA strategic materials operations were authorized in the Econimic Cooperation Act of 1948; and later the Mutual Security Agency's program was authorized in the Mutual Security Act of 1951.

There has always been an applicable provision.

Mr. REDWINE. You say the authority stems from what act, Mr. Rivkin?

Mr. RIVKIN. Economic Cooperation Act of 1948, and then the Mutual Security Act of 1951,

Mr. REDWINE. As to this activity of GSA, whose directives do they operate under?

Mr. RIVKIN. They are an independent agency and they have their own statutory autority.

Mr. REDWINE. These functions that have been turned over to them by your agency and predecessor agencies to your present ICA, how did GSA get in that?

Mr. RIVKIN. By Executive order of the President, sir.

Senator MALONE. Do you have the Executive order?

Mr. RIVKIN. We don't have it with us, sir, but we certainly can make it available.

Senator MALONE. Do you have that Executive order?

Mr. RIVKIN. We don't have it with us, sir, but we certainly can make it available.

Senator MALONE. What does it say?

Mr. RIVKIN. It transferred the functions that the Mutual Security Agency was carrying on in the materials field to the Defense Materials Procurement Agency. The President set up an independent agency by Executive order.

When DMPA was liquidated the functions were transferred to GSA.

Senator MALONE. Then there was more than one Executive order involved?

Mr. RIVKIN. There was certainly one that affected MSA, which was the transfer to DMPA. I assume there was one to effect the transfer from DMPA to GSA.

Senator MALONE. Do you remember the Executive orders?

Mr. RIVKIN. No.

Senator MALONE. Can you furnish that?

Mr. RIVKIN. Yes, sir.

Senator MALONE. Can you get them today so they will be included in the record?

Mr. RIVKIN. I think so.

(The following was subsequently received for the record:)

Transfer of strategic materials program from MSA to DMPA was by Executive Order 10281 of August 28, 1951. This supplemented and amended Executive Order 10161, dated September 9, 1950. There also followed a memorandum of understanding between MSA and DMPA, effective date November 30, 1951.

Transfer of strategic materials program from DMPA to GSA was by Executive Order 10480, dated August 14, 1953.

Mr. HOLDERER. Senator, we have been trying to develop to what extent the International Cooperation Administration has been assisting in the development of foreign mineral resources. That is the purpose of asking them to attend this hearing.

Now, from MR. SWEETS' testimony, it develops that they are no longer interested in developing foreign mineral resources.

Is that correct, Mr. Sweet?

Mr. SWEET. Under these large programs.

As I say, we have no projects that I know of at the moment, although there would be no limitation, I don't suppose, in the use of funds for that purpose if something should develop.

We have to consider it on a case-by-case basis if a project comes up.

Mr. HOLDERER. There would be nothing to prevent you from getting into that if it seemed to be opportune?

Mr. SWEET. The countries, you see, submit their request for financing various projects. As far as I know, there are no mineral development projects being financed at the moment.

Mr. HOLDERER. You say that is true since 1951?

Mr. SWEET. Well, except for the basic materials projects that I spoke about. There is a column here, "Basic materials."

Mr. RIVKIN. The basic materials program was authorized in the Mutual Security Act of 1951; as a legal matter there would be nothing in the mutual security legislation that would inhibit us from financing a minerals project if it fell within the scope of an aid program.

It would not be to obtain materials for the United States stockpile, however. It would be a grant-in-aid or loan aid in the same way we might lend money to develop any industrial plant.

There is, however, no authority for an integrated or organized program of the type we had in the early ECA-MSA days to procure and produce and develop mineral resources both for stockpile and for the benefit of the aid country. There is no such authority in the legislation now .

Mr. REDWINE. Mr. Rivkin, do I understand that these earlier functions have been transferred over to GSA and now is CSA just servicing these old loans? Is that the situation, Mr. Rivkin?

Mr. RIVKIN. That is right. It is a housekeeping function, essentially. They do have their own legislation under which they run their own materials program.

But that, I take it, they will testify to. But so far as the things they have inherited, it is essentially a housekeeping and liquidating operation.

For a period of time DMPA was active. DMPA did carry on some development functions.

Mr. REDWINE. In other words, it is purely a housekeeping function now, or police function?

Mr. RIVKIN. Exactly, sir.

Mr. HOLDERER. In view of the fact that they have nothing on their books at the present time, I cannot think of any other questions to ask.

Senator MALONE. Mr. Sweet, I have just left one committee to come to this one. I am sorry I did not have an opportunity to hear your entire statement, but in reviewing part of it, I see that:

> Early in the life of the ECA's Strategic Materials Division, in addition to the responsibility of purchasing commodities for the stockpile with United States-owned 5–10 percent counterpart funds, it was decided that the development of mining properties abroad with counterpart funds and dollars payable through shipment of scarce materials to the stockpile, would be a continuing and more effective method of carrying out the mandate referred to in the section 117 (a) quoted above.

Now, what was that mandate in a sentence or two?

Mr. SWEET. It is quoted above.

Senator MALONE. Tell us how you interpret it? What is it?

Mr. SWEET. As I understand it, this was to increase the production of minerals in those participating countries which were required by the United States, deficient materials, strategic materials.

In other words, we bought strategic materials for the support of the stockpile as indicated in this document.

We also developed materials with loans, which were repaid to the stockpile in materials.

Senator MALONE. This 5 to 10 percent counterpart fund, that is 5 to 10 percent of what?

Mr. SWEET. Mr. Rivkin has just explained it. The total counterpart, dollar-for-dollar, of dollar aid, every dollar that was given for aid with the corresponding equivalent in local surrency was put up by the country receiving the aid.

Senator MALONE. Who fixed the price of exchange so that it made the dollar-for-dollar?

Mr. SWEET. It was at the exchange, the equivalent in the local currency was put up.

Senator MALONE. Fixed by the Nation, itself, that is the foreign nation?

Mr. RIVKIN. No, the exchange rate was generally the rate declared to the International Monetary Fund if the recipient country was a member.

Senator MALONE. Let us take Bolivia, for example. When I was there they had an exchange rate of 500 bolivianos to the dollar.

Now, that was approved, I presume, by the International Monetary Fund. As a matter of fact, the market price on the street was 1,700 to the dollar.

So it was of interest to me to know who fixed the price on the dollar.

Mr. SWEET. Here is the schedule of the conversion rate, sir, which was used as of that date.

Senator MALONE. June 30, 1955. It was 6 months before that. 190 bolivianos to the dollar.

Mr. SWEET. As of this date.

Senator MALONE. What do you suppose they are worth on the street over there at this date?

Mr. SWEET. I would not know.

Mr. HOLDERER. The last figure I saw, Senator, was about 4,000.

Senator MALONE. Was that a few months ago?

Mr. HOLDERER. About 2 months ago.

Senator MALONE. Somewhere between 1,700 and 4,000. Seventeen hundred when we were there.

Mr. HOLDERER. That is right.

Senator MALONE. They did not get any less?

Mr. HOLDERER. No.

Senator MALONE. They had a rate of 500 bolivianos they would give you for a dollar, which you were forced to turn in within 30 days; is that right?

Mr. HOLDERER. Yes.

Senator MALONE. Do you understand that situation?

Mr. SWEET. I am not familiar with the Bolivian position, personally.

Senator MALONE. What position do you hold in this?

Mr. SWEET. I am in the Office of Industrial Resources, Chief of the Industrial Commodity Trade staff of the Office of Industrial Resources.

Senator MALONE. That is the International Cooperation Administration?

Mr. SWEET. That is right.

Senator MALONE. What I am trying to establish for the record is who are you cooperating with? Then what do you do as indicated here, 190 bolivianos to the dollar on June 30, 1955? You take whatever Bolivia sets for the exchange, whatever rate they set and are able to get approved by the International Monetary Fund; is that right?

Mr. SWEET. This, sir, is a question which I am not competent to answer. I would have to go back to the people who handle that problem.

Mr. RIVKIN. I think that is a fair generalization, however, that the agreed International Monetary Fund rate was accepted.

Senator MALONE. It is a fair generalization to say that I told you when I was there the law was that you must turn in within a reasonable time—when you get a dollar through trade or any other way, you have to turn it in to the Central Bank within 30 days.

We will assume that is right, because it is not far off.

I was in a lot of those countries in 6 months, so sometimes memory plays tricks on you, but when they set it at 500 to the dollar, no doubt by the International Monetary Fund, it was then worth 1,700 on the street and on the International Stock Exchange.

Are you familiar with the way these things are done?

Mr. Rivkin, are you familiar with the way they set these international exchanges?

Mr. RIVKIN. Not intimately, no. I have had some experience. I served abroad for 6 years.

Senator MALONE. Where did you serve abroad?

Mr. RIVKIN. In Paris and London.

Senator MALONE. Well, you are undoubtedly familiar with French and English methods of overvaluing the currency in terms of the dollar.

Mr. RIVKIN. I am familiar with the way they value their currency, yes.

Senator MALONE. They are always overvalued, are they not?

Mr. RIVKIN. That is debatable.

Senator MALONE. If it is debatable, I would like to hear you debate it right now.

Mr. RIVKIN. I do not believe that I am the one to debate it. I think the British might debate it and I think the International Monetary Fund which set the rates might do so. But I am not going to, sir.

Senator MALONE. If you do not want to, I will pass that over, but there has never been a time that I have checked the franc and dollar but what it was overvalued at least 30 percent and up to 50 or 100 percent.

I cannot quote the exact figure, but if you had a couple of dollars you wanted to change into something you could get the number of francs you asked for, about 350, and that was about twice as much as the official rate.

You are familiar with those things, are you not?

Mr. RIVKIN. I am aware of the fact that may have happened quite a bit in France. I am not aware that it happened very much in England.

Senator MALONE. I might as well advise you. You served over there all that time and did not find it out.

In 1948 I went to Hong Kong for one reason, that was to figure out how this free exchange worked. It was a tremendous exchange area, if you remember.

I do not know exactly what they called it. I, myself, just so there would be no doubt about it, walked up to the bank window and laid down a dollar in American money and you got 6 dollars, and I believe 10 cents in London money in the fall of 1948. I could be off a few cents one way or another.

You walk down to another window and lay down $16.50 Hong Kong money and get a British pound to spend it any place in the world.

That is the tremendous exchange area.

If you compute that it will make $2.60 for the pound when it was valued at $4.03 in London and we made up the difference here through appropriations by Congress, of course, under the Marshall plan.

Now we are calling it International Cooperation Administration.

Are you familiar with that method at all?

Mr. RIVKIN. Yes, I am aware, not in Hong Kong terms, but in terms of Switzerland.

Senator MALONE. You know you could buy the British pound at $2.06 when it was selling at $4.03.

Mr. RIVKIN. I take it that is right. That was before devaluation. I served in England after devaluation when it was $2.78 and that held pretty firmly when I was there.

Senator MALONE. It did not hold on the market. It has held firmly until now and we take it and make up the difference. It is $2.80 now; is that right?

Mr. RIVKIN. $2.78 to $2.82.

Senator MALONE. It is worth actually about $2.25. So we are still making up the difference. It is only a matter of how it is done.

Now, I was behind the Iron Curtain for 2 months and a half. In Russia they value the dollar 4 rubles to the dollar; the actual value would be about 16.

The hotel room cost me $39.50, I think, with meals—16 rubles to the dollar, at $10 that would be about right. There is no difference between the way Russia does and the way England, France, Bolivia does, except the extent.

The principle is the same.

Now, we come back to the counterpart funds. What is it?

Mr. SWEET. The counterpart is where the equivalent in dollars at whatever rate it is, I don't know what the rate is——

Senator MALONE. Whatever rate they fix on the dollar and they can get the International Monetary Exchange Bank to approve.

Mr. SWEET. This was deposited in an account. Originally 5 and later 10 percent of the money was owned by the United States.

The other 90 percent was the property of the country and could be used for various purposes.

Senator MALONE. That is our money you are talking about?

Mr. SWEET. The 90 percent is their money; the 10 percent is our money, United States owned counterpart.

Senator MALONE. When we put up, say, a million dollars, they do what then?

Mr. SWEET. They put up a million dollars in their local currency to match the million dollars. Of that million they put up, 10 percent of it becomes the property of the United States. The other 90 percent is their property, owned by the government of the country for various uses within that country, with the approval of MSA or ICA–FOA.

Senator MALONE. Yes; and our money, the million we put up is also expended in their country?

Mr. SWEET. Not necessarily.

Mr. RIVKIN. Ordinarily in this country.

Mr. SWEET. Ordinarily here because this whole strategic program was taken out of that.

Senator MALONE. But expended for what in this country?

Mr. SWEET. Various purposes.

Senator MALONE. What do you do with the things you buy with it?

Mr. SWEET. Under the program which is described in the testimony here——

Senator MALONE. Tell me.

Mr. SWEET. This 5 or 10 percent counterpart was used in this program.

Senator MALONE. No; when you take a million dollars of ours you spend it here, what do you buy and what do you do with it?

Mr. SWEET. Under this program we did such and such. Under the new program, why, it reverts to the United States Treasury——

Mr. RIVKIN. I don't think you have the Senator's question. The question is what did you do with the million dollars of aid. That was

programed for commodities which were essentially purchased in this country and shipped abroad.

Senator MALONE. Shipped to the country you allocated a million to in the first place, and that is the million they put up, the million dollars in their currency at their exchange.

But when you said that it was expended in their country, it is a technicality. You give it to them. You give them the product you buy with your million dollars.

Mr. SWEET. Let me put it this way: We give authorization to a country in dollars to buy something in the United States or somewhere else.

Senator MALONE. Start with the million. We put up a million and they put up a million, regardless of what exchange it is. They put up a million and we put up a million.

Now, they spend their million dollars in their own country except the 5 to 10 percent which belongs to us.

Mr. SWEET. That is right.

Senator MALONE. And we expend the 5 to 10 percent in that country?

Mr. RIVKIN. I think that is correct; yes. We were not always restricted to spending the 5 to 10 percent in that country, but as a realistic matter it generally worked out that way. That is what generally happened because of the lack of foreign exchange.

Senator MALONE. You spend it in that country?

Mr. RIVKIN. That is right. The million dollars was spent generally in the United States.

Senator MALONE. Let us stay off that for a minute. Let us stay on the million dolars.

We know it was not a million dollars. If you had 190 bolivianos for the dollar, what you got was about 3 cents in the first place.

But let us assume you got the full amount; 5 to 10 percent you said here was counterpart funds that belong to us. Now, what do you do with it?

Mr. RIVKIN. First, I think we might note Senator Malone, that this counterpart system, that has been described, applied essentially to all aid going to Western Europe.

The Latin-American, Far Eastern, and Near Eastern systems have been somewhat different.

Senator MALONE. Let us go ahead with the way you do it in Europe.

Mr. RIVKIN. What would we do with that 5 or 10 percent?

Senator MALONE. It is not always 10 percent; is it?

Mr. RIVKIN. Originally it was 5 percent. It was changed in approximately 1950 to 10 percent.

Senator MALONE. What do we do with the 10 percent?

Mr. RIVKIN. We use that for administrative expenses of the United States. Not only for the ECA–MSA missions that were in those countries, but for the United States Embassy or any other United States Government agency expenses abroad.

Senator MALONE. Spend it here?

Mr. RIVKIN. No; in those countries, instead of using dollars to buy their local currency to meet local expenses.

Senator MALONE. If you take 190 bolivianos over there, which I cannot imagine, but I guess you do, then for a dollar you get 190 bolivianos, and 10 percent of it, which would be 19 bolivianos, would belong to you and you could pay your own help over there.

You do not pay your Ambassador in bolivianos?

Mr. RIVKIN. No, not the dollar part of the salary, but we pay allowances in local currency, the quarters allowance, and so forth.

Senator MALONE. Where he buys local products to live?

Mr. RIVKIN. As you know, Foreign Service personnel, in addition to a salary, get quarters allowance.

Senator MALONE. You rent it and pay someone who is a citizen there, so you pay in their own money?

Mr. RIVKIN. An American citizen gets a rent allowance in local currency and pays his rent with that money.

Senator MALONE. He pays a local resident for rent or food?

Mr. RIVKIN. No question about that.

Senator MALONE. Can he use that at that exchange around the street at this 190 bolivianos to buy food and pay rent?

Mr. RIVKIN. We were expected to, yes. We got our allowances at the official exchange rate and if our allowance was, for example, say $2,000, we got it at the official exchange rate.

Senator MALONE. How do they make up the difference, by raising the rent and price of food?

Mr. RIVKIN. The local residents may well have. The United States citizen got the same allowance. I don't mind saying personally I was in a squeeze more than once.

Senator MALONE. But the people who got the rent made it up some way. I wonder if you knew how?

Mr. RIVKIN. Well, they charged us higher rent, I take it.

Senator MALONE. A little higher rent to make up the difference in exchange?

Mr. RIVKIN. I have never been able to know for sure, nor have I had it explained, but there were times, sir, when occasionally the allowance we got was not adequate.

Senator MALONE. That may have something to do with it.

Mr. RIVKIN. Yes, sir.

Senator MALONE. I know about that. I have been in every nation in the world and exchanged money back and forth and lived in the hotels in every country.

Now, what we do then is to take 10 percent and expend it in that country that originally put up the money regardless of how it is expended either for food or rent or to build a building.

You can do that, can you not?

Mr. RIVKIN. Under certain circumstances, yes.

Senator MALONE. But you pay the wages in accordance with the value on the street, do you not?

Mr. RIVKIN. We pay the going rate; yes.

Senator MALONE. Instead of 190 bolivianos, you pay enough for the wages to make up that difference in exchange? Have you ever had any experience in that phase of it?

Mr. RIVKIN. I have not, personally no, sir.

Senator MALONE. You were over there a while?

Mr. RIVKIN. Yes, sir.

Senator MALONE. But you never had any experience in that phase of it?

Mr. RIVKIN. No. I suspect that is what happened to me when I paid my bill.

Senator MALONE. You never had quite enough money?

Mr. RIVKIN. I never had.

Senator MALONE. Well, I can understand that. A man of your type and intelligence would ordinarily look behind it at least for his own information, even if he knew he was stuck.

Mr. RIVKIN. Well, sir, I might express a personal opinion and say I suspected half as much.

Senator MALONE. That is what I am asking you to do now.

Mr. RIVKIN. I don't think it is particularly pertinent.

Senator MALONE. It is pertinent here.

Mr. RIVKIN. Well, sometimes our allowances did not cover.

Senator MALONE. In other words, the allowance they gave you for a dollar in that money did not cover the situation and you made up the difference with whatever money you had. Is that about it?

Mr. RIVKIN. I think that is a fair statement. I don't exactly know why that happened, sir.

Senator MALONE. It happened because their currency is overvalued.

Now, there is another statement that is interesting to me here:

> There would also be the obvious added advantage to the participating countries in lessening their dependence on Western Hemisphere sources and foreign aid grants and the advantage to the United States of reducing the drain on its sources of materials.

Will you explain that to me, Mr. Sweet?

Mr. SWEET. Well, that is where there were shortages of supplies in the strategic materials. We were trying to get materials for the stockpile.

If materials were developed in a European country which was trying to buy from the Western Hemisphere, they would not have to go to the Western Hemisphere to get it.

Senator MALONE. And it was an advantage to the United States in reducing the drain on its source material.

Mr. SWEET. If the source happened to be Latin America and materials were developed in Europe or Africa that would go from Africa to Europe, then European countries would not have to come to the Western Hemisphere for them.

Senator MALONE. What about the stuff you purchased over there to come here?

Mr. SWEET. That was stuff that they had that we could buy for the stockpile.

Senator MALONE. Will you name some of the things that were included?

Mr. SWEET. These are on the development project. Aluminum, asbestos, bauxite, beryl, mica, chrome.

Senator MALONE. Wait a minute. Start again.

Mr. SWEET. It is on the sheet.

Were you aware at the time you were buying this lead that our mines in the United States were shutting down?

Mr. SWEET. Not I, sir. This was not our program, as I explained previously. This program was originally started in ECA–MSA and then was transferred to DMPA.

Senator MALONE. When was it started?

Mr. SWEET. In 1949. It was transferred to DMPA and later to GSA.

Senator MALONE. You are familiar with the fact that the lead-zinc mines are practically closed down in this country because of the 10 and 11 cents per pound price in competition with foreign sources, are you not?

Mr. SWEET. I have heard something to that effect.

Senator MALONE. Do you believe it?

Mr. SWEET. That they have closed down?

Senator MALONE. Yes.

Mr. SWEET. I had not understood they were all closed down.

Senator MALONE. They practically all did. If they did not close down, they are running at a loss in order to postpone abandonment of the mine as long as they could, because a lot of them would fill up with water and it would be expensive to open up.

You are familiar with the fact that most of them closed down while you were importing the material?

Mr. SWEET. I wasn't doing it; that is what I am trying to say. As I tried to explain in the beginning, we have compiled this statement from our records, that the present ICA and FOA has not had responsibility for this program since 1951. It was transferred 5 years ago.

Senator MALONE. What is your experience or observation or training in the matter of some of these metals? For example, take tungsten, what do they tell you about the supply of tungsten in this country?

Mr. SWEET. Today?

Senator MALONE. No, your education, what do you think about it, your sources of information, as a scarce material?

Mr. SWEET. We get most of the information from the Office of Defense Mobilization.

Senator MALONE. What did they tell you?

Mr. SWEET. I would have to check that.

Senator MALONE. Let us take tungsten, for example. Did they tell you we didn't have tungsten in this country?

Mr. SWEET. I could not answer that without going back to the records.

Senator MALONE. I will answer one thing for you. That is for 24 years we have had a brain washing in this country that we do not have any materials. On tungsten especially—that we have to get it from foreign countries because the United States does not have tungsten.

Now, because of a bill that was passed in 1953—the Malone-Aspinall Act, which we are trying to get extended now, or in a modified form—we have so much tungsten now that it is embarrassing.

The price was set just enough above the world price to pay the difference in the wages and the taxes and cost of doing business here and in your chief competing nations. That is all you ever needed to produce most of those things.

Of course, a 20-year lesson in the thing is pretty hard to eradicate. I am finding that out.

Well, that is enough of this. Has this been put in the record?

Mr. HOLDERER. Yes. What date can we put on that?

Senator MALONE. What period of time?

Mr. REDWINE. Mr. Chairman, I would like to ask a question in that connection. I notice on there, Mr. Sweet, that that material was declassified only as of today.

Mr. SWEET. That is right.

Mr. REDWINE. Will you tell me, please—I am sure the committee would like to know—why that type of material has been classified and who is responsible for its having been classified in the first instance?

Mr. SWEET. Well, it goes way back to the time when they were buying for the stockpile and the material was classified. That is all I can say.

Mr. REDWINE. It has been classified until today? You had it declassified so you could testify; is that it?

Mr. SWEET. Well, we had some very good friends that helped us to declassify it. This material came from other agencies, that is all I can say. We observed their classification.

Mr. REDWINE. It was not your classification?

Mr. SWEET. No.

Senator MALONE. Let either the record show that everybody in the world knows that except the people that ought to know it, and that is the Congressmen and Senators. I can find that information in Russia.

Mr. SWEET. Here it is right here in this book, too. This is brought up to date.

Senator MALONE. You get a witness up here and there is certain classified information, if they give it to you at all it is under lock and key and then you read it in the paper in about 3 days, where it should have been in the first place. By keeping a thing a secret, like your tungsten production——

Mr. SWEET. I am not trying to keep it secret.

Senator MALONE. I am taking all the Government bureaus. By keeping it secret it is easier to make people believe that we do not have these materials and all you ever have to do, on this whole list, is to pay a price for them that makes up the difference in the wages, American wages, and taxes and cost of doing business above the world price and you are in business in this country.

Not all of them, but you would be self-sufficient on a lot of them. Copper has gone up to 56 cents.

If the United States Government guaranteed a price of 35 cents a pound for 20 years, in a few years copper would be running out of our ears in this country.

But then there would be several agencies down there with nothing to do. That would not be right; it would cause unemployment.

I yet have not gotten the information from you as to why you believe, if you do believe that statement you have made, it would be of advantage to the United States to reduce the drain on its materials here.

Mr. SWEET. This was the thought, sir, at the time——

Senator MALONE. You did not write this at the time. This was written for your testimony today, was it not?

Mr. SWEET. That is right. I am trying to recount the fact that we had a Korean war at the time and that the stockpile was short of materials; that this was one means of alleviating the shortage of these materials.

Senator MALONE. Do you still believe this?

Mr. SWEET. It all depends on the condition of the stockpile.

Senator MALONE. Does it?

Mr. SWEET. I mean this was the prime motivation of the program.

Senator MALONE. I am talking of today. You are up here today. What do you believe? You are down there in an industrial capacity, probably a very important person down there. I just have not met you before, that is all.

What is your title?

Mr. SWEET. I am Chief of the Industrial Commodity Trade Staff.

Senator MALONE. That sounds like a very important job and it could affect industry in this country very importantly, so what do you believe about tungsten today?

Mr. SWEET. I don't have anything to do with tungsten today, myself, personally.

Senator MALONE. You are still putting out this information. Why do you not check it?

Mr. SWEET. This?

Senator MALONE. Yes.

Mr. SWEET. This is a statement, sir, which tried to explain why the program was carried on.

Senator MALONE. Why do you not give us some reasons why you want to abandon it now?

Mr. SWEET. It has been abandoned. There is no program, sir. The program was discontinued.

Senator MALONE. What are you doing today down there with this—ICA, is it?

Mr. SWEET. Yes, sir.

Senator MALONE. They change it every year so you cannot quite keep up with it.

Mr. SWEET. We have the administration of the overall economic aid program.

Senator MALONE. What is the program today?

Mr. SWEET. Our particular phase of it is the industrial side of it.

Senator MALONE. What are you supposed to do?

Mr. SWEET. We administer the foreign aid program.

Senator MALONE. What do you do with it? What are you doing with it? Do you have time to explain it to the committee, or do you know about it?

Mr. SWEET. It is quite an elaborate subject.

Senator MALONE. Why do you not tell us in words of one syllable?

Mr. SWEET. The foreign aid program, of course, as you know, is administered by the International Cooperation Administration, which is part of the State Department.

We represent a portion of that program in an operating capacity.

Senator MALONE. What are you trying to do? What is your objective now? What are you developing in these countries?

Mr. SWEET. We are not developing these materials—I tried to point out we do not have any program at the moment.

Senator MALONE. What kind of projects?

Mr. SWEET. Financing these strategic minerals projects.

Senator MALONE. You are not financing them now?

Mr. SWEET. No, sir.

Senator MALONE. What are you doing with them?

Mr. SWEET. We are not doing anything with minerals except that we have some technical assistance programs.

Senator MALONE. How does your technical assistance work?

Mr. SWEET. I will refer that to Mr. Lockwood.

Mr. LOCKWOOD. In regard to the technical assistance programs, they fall into 1 or 2 general categories, that of helping these countries build up their own government minerals agencies so that they can operate them more effectively.

Most of this work at the present time is carried on in Latin-America and in the Near East. Practically none of it has been done in the European countries in recent years.

One of the techniques that we use is to recruit through the Department of the Interior, engineers or geologists as the situation demands, and send them over there on a 2-year basis and they work with the local mineral chiefs of the country bureau of mines and geological survey trying to build up a staff that can adequately take care of their own minerals problems.

For example. we have a technican in Pakistan whom we recruited through the Bureau of Mines who is now engaged in helping reorganize their Bureau of Mines. The responsibilities of their bureau were formerly scattered among quite a number of agencies and they were unable to function to the best extent. Our man is trying to coordinate their efforts.

Senator MALONE. We had 38 agencies in the business of buying minerals for a while, did we not? Do you suppose we can get somebody from Pakistan to help us consolidate it?

Mr. LOCKWOOD. I don't know. You might try.

Senator MALONE. I guess you still have quite a few agencies in it. Go ahead.

Mr. LOCKWOOD. And in the geological field we do more or less the same type of thing.

For instance, in the Philippines we have a number of geologists from the United States Geological Survey. We have programs which call for one of our men to go out with a group of Filipino government technicians and make geological surveys over areas where there has not been any particular development, where there are some possibilities. That has been quite successful in training the Filipinos to do this sort of work themselves, as well as obtaining data on the economic possibilities of the regions under study.

Senator MALONE. Have you been familiar with the mining operations in the Philippines for the last 25 to 30 years?

Mr. LOCKWOOD. Not for the last 25 or 30 years. I was over there in 1953 and have been familiar with activities there to a certain extent since then.

Senator MALONE. Did you not find any mines that had been operating over the past years there?

Mr. LOCKWOOD. They have a large number of operating mines in the country and the mining industry has been taken care of by private investment very successfully.

On the other hand, there are some gaps in their mineral economy.

For instance, in the field of nonmetallics most of these rather simple items are being imported or not used at all. We have recruited two men from the United States Bureau of Mines who are going over there and working along with the Philippine Bureau of Mines people to try to develop such deposits that we feel might be——

Senator MALONE. What were these nonmetallics that were lacking there?

Mr. LOCKWOOD. Building materials of different kinds. Then I believe one of them was in the field of fertilizers, and a variety of industrial materials.

Senator MALONE. Who pays these men that you send over there?

Mr. LOCKWOOD. Those are part of our appropriated funds, as allotted to the Philippine Government. The foreign aid allotment to the Philippine Government.

Senator MALONE. What does a man like that cost? What do you pay him?

Mr. LOCKWOOD. I guess you get a man like that at an average of around $9,000 basic pay, and post differential depending on the country.

In the Philippines it may be 15 percent, something of that nature. It varies from country to country, depending on the living conditions there.

Senator MALONE. Philippine must be a very poor country that they could not hire two engineers to come over there and help them with the reorganization of their bureau or in their exploration work.

Is it a very poor country?

Mr. LOCKWOOD. They are sufficiently poor that it was deemed necessary for them to have a foreign aid program there. In a number of these fields they needed technical assistance.

Of course, our work in minerals is just part of the programs.

Senator MALONE. You have two men over there under this minerals and materials exploration?

Mr. LOCKWOOD. They have several over there.

Senator MALONE. But they have two top men, you said.

Mr. LOCKWOOD. As I said, they have two of these nonmetallic men over there. They have a third man, a geologist from the United States Geological Survey who heads up the Philippine mineral program has been over there on a continuing basis, since 1945.

Senator MALONE. Where do you have these engineers looking for minerals in these foreign countries? Do you have them in South Africa?

Mr. LOCKWOOD. No, that is not one of our countries.

Senator MALONE. You have nothing to do with that through this organization?

Mr. LOCKWOOD. No.

Senator MALONE. Do you have them in other places, in Asia, or Europe?

Mr. SWEET. I think we can get a list and submit it to you.

Senator MALONE. My next question is going to be, What do they do with these minerals after they locate them and install their plants? Do they use all of them themselves, or ship them to other countries?

Mr. LOCKWOOD. It depends, of course, on the country we are dealing with, but in the Philippines actually there are experts in certain minerals like chrome. Some with local assistance is taking place in that field and with regards chrome. Chrome is a material that would be exported.

In the field of iron ore, as you know, the Filipinos are probably the biggest suppliers to Japan which is a pretty important thing for them,

because the Japanese are cut off from the supplies they formerly relied on from the Chinese mainland.

Senator MALONE. Are they shipping iron ore to Japan now?

Mr. LOCKWOOD. Yes, they are. Iron ore is being shipped from the Philippines to Japan and from a number of other countries in the area, as well.

Senator MALONE. From Nevada, too?

Mr. LOCKWOOD. Yes, so I understand.

Senator MALONE. Paid for by the obvious. There have been some negotiations going on recently between Japan and China to resume trade relations, have there not?

Mr. LOCKWOOD. I don't know what you refer to.

Senator MALONE. They were meeting when I was in Russia. They did not quite get together.

As a matter of fact, you folks are in the industrial engineering business. That is what I understood. You are an industrial engineer?

Mr. SWEET. He is in the engineering department.

Mr. LOCKWOOD. I am a mining engineer.

Senator MALONE. Well, you have industrial engineers down there, do you not?

Mr. LOCKWOOD. Yes, we have them in our shop.

Senator MALONE. Did you ever ask any of them where certain nations of the world would finally have to trade? You know, of course, Japan is going to have to go to Manchuria or China, at least your engineer will tell you that, if you ask him, because you cannot ship iron ore 10,000 miles and make steel and sell it. Of course, you might with 19-cents-an-hour labor.

Well, of your own knowledge, then, you do not know that you develop these materials in a good many instances and then arrange to buy them from that nation on that low-wage world price?

Mr. LOCKWOOD. We don't get involved in any of the purchases or anything like that.

Going back to our technical assistance program, we are trying to train their personnel to do a better job in their own country.

Senator MALONE. Let me ask you this: Do you ever understand what is going on in any other department? Do you just confine it to your sole study and you never know what another department is doing, or where the imports are coming from in this country?

Mr. LOCKWOOD. You mean with regard to this?

Senator MALONE. Say manganese, tungsten.

Mr. LOCKWOOD. With regard to this country here?

Senator MALONE. Yes.

Mr. LOCKWOOD. Or with regard to other countries?

Senator MALONE. Other countries, too, and this one.

Mr. LOCKWOOD. It is not a part of our job at the present time to keep track of that sort of thing. Of course, in the old days during the procurement program, we used to keep in touch with those things very closely, during the years 1948 to about 1953, when we were financing the purchases of raw materials, nonferrous metals and minerals in this dollar area.

Senator MALONE. You were at that time developing those minerals through your technical program and buying them and shipping them in here in the United States?

Mr. LOCKWOOD. No, at that particular time, during the grant-aid program all we did, as Mr. Rivkin said, was to supply dollars with which the participating countries bought the various commodities of all kinds in the dollar area: in the United States, Latin America, and so forth.

Senator MALONE. Who bought them?

Mr. LOCKWOOD. A great variety of countries. France, United Kingdom, Germany, Norway, Sweden, all the countries.

Senator MALONE. Is it not a fact that we supplied England with money with which they built up a lead and zinc stockpile during World War II and right after that period?

Mr. LOCKWOOD. I think I would have to go back and consult about that. I am not familiar with that phase of it.

Senator MALONE. The thing that broke the lead and zinc market in this country was in 1953, I think it was, or 1954—I can easily verify it—they started shipping that zinc and lead into this country.

Of course, we furnished the money for it in the beginning. So it did not matter how much money they got for it; it was profit anyway. It knocked the price down to around 10 or 11 cents a pound, closing approximately every mine in the country.

You never heard anything about that?

Mr. LOCKWOOD. We weren't particularly involved in that end of it.

Senator MALONE. The help that they called the Marshall plan, ECA, and MSA, was doing that? We are not furnishing the money?

Mr. LOCKWOOD. You are talking about 1953?

Senator MALONE. I am talking about 1946, 1947, 1948, and they broke the market here later.

Mr. LOCKWOOD. Starting with 1948, as far as England is concerned, we were financing raw materials for them from 1948 through until about 1952 except there was a 1-year gap when they went off foreign aid, they did not ask for any financing for a period of time.

The Korean war came in and then they came back.

Senator MALONE. That was the time you bought this zinc and lead for them, or gave them the money to buy it.

Now, are you sure you are not doing the same thing now?

Mr. LOCKWOOD. We don't have any program of that nature, Senator.

Senator MALONE. You have not, but the other countries may have. You send the engineers and send the money and finally when they get into production we buy it at the world price and let our own mines close down. That is what we have been doing.

At the moment it would do you good to study some of these hearings. Our own people are selling tungsten and manganese at the guaranteed price so you can mine it at some kind of profit in this country per unit, sell it to the Government and then buy it from foreign sources for their own use.

Are you familiar with that procedure?

Mr. LOCKWOOD. I heard you talking about it the other day.

Senator MALONE. You did not try to verify it or you did not try to find out if it was true?

Mr. LOCKWOOD. Several witnesses said so, so I presume it is true.

Senator MALONE. I am surprised that an engineer who has been in this game as long as you have does not know something about what is happening in the field he is in, of his own knowledge. But, of course, I guess that was customary in the Bureau.

Mr. LOCKWOOD. We try to keep informed about the things.

Senator MALONE. Anyhow, you are furnishing these technicians to develop more of this very material we are talking about in these foreign nations.

Mr. LOCKWOOD. I don't think it will work out that way, because most of these countries that we are working with now are not tremendous producers of materials and it is a question of giving them help so they can get along as best they can and take advantage of their own resources.

Senator MALONE. You see, I am not objecting to their producing this material. I am only objecting to the taxpayers or someone in the same business in this country financing it.

You take the Philippines, it is a wonderful country. They have chromite and manganese. You are helping them there with technical assistance so they can better compete on the world market.

Mr. LOCKWOOD. Mining is an integral part of their economy.

Senator MALONE. So we have a system now of free trade over in Geneva, they are now regulating the markets in this country, 35 nations; we have 1 vote and they have 34.

You are familiar with that procedure too, I presume, in a general way.

What I wish to establish here is this: that your counterpart funds are made up of 10 percent of the money that that nation puts in, whatever it is, at their own fixed rate of exchange regardless of what the market price of the money is.

Are you doubting that? I want you to explain it, if you are doubting it.

Mr. RIVKIN. No; it is an agreed rate. Generally it was either the international monetary rate, as I said, or a rate we agreed with the other country.

Senator MALONE. You thought it was funny. I wonder if you had a better explanation.

Mr. RIVKIN. No, sir; just the explanation I offered before.

Senator MALONE. Now, all their money is expended in their own country including the 10 percent that we get at a falsified exchange.

Then all of our money is expended there for their benefit.

I am going over that again, Mr. Sweet. You may spend it here; you may spend it in some other country, but the material you buy is sent to that country that has been allocated that money; is that right?

Mr. SWEET. The dollars are used to buy something in a dollar area for dollars.

Senator MALONE. In that country?

Mr. SWEET. For that country.

Senator MALONE. They put up a million at their rate of exchange, which probably would be about $100,000 if it was on the open market in some of those countries—in some it might be a little more—and all of that is expended in their country and all of our million that we put up is expended for their benefit regardless of where you spend it.

Mr. SWEET. Sure, they import goods with the dollars that we grant them, or authorize them to spend.

Senator MALONE. All I am trying to say is that it all comes out of the same pocket and that is the taxpayers of the United States, and then comes back. That is right; is it not?

Mr. SWEET. It comes back in dollars.

Senator MALONE. How does it come back? Explain it to me, please.

Mr. SWEET. I did not say the money came back.

Senator MALONE. I have not heard about any of it coming back. So I was just curious.

I see an item here which has been called to my attention, under (c) on page 3:

> Two geological surveys and a cobalt project totaling $2.1 million were financed in Portuguese Africa and the United Kingdom dependent territories in Africa on a grant basis. The balance of the program was on a loan basis.

Will you explain how that was done?

Mr. SWEET. This was a grant instead of a loan. Most of the program was on a loan basis whereby it was repaid either in dollars or material for the stockpile.

This particular part of the program was a grant; in other words, the money was granted.

Senator MALONE. $1.3 million?

Mr. SWEET. Of the total one-hundred-and-twenty-odd million dollars.

Senator MALONE. That was a grant?

Mr. SWEET. That was a grant.

Senator MALONE. So you simply spent it in their country?

Mr. SWEET. In other words, the country spent it.

Senator MALONE. They spent it.

Mr. SWEET. In other words, the country did not have to pay it back to the United States.

Senator MALONE. Now, when you go into these countries and you develop minerals and then you buy the minerals for our stockpile, whether it is tungsten or whatever it is, that takes the place of the domestic product to that extent, does it not?

Mr. SWEET. If it was available domestically, I imagine the stockpile would buy it domestically. Most of these things were not available.

Senator MALONE. It would be interesting to you to go into that. They have been buying the tungsten. Of course, we have a law that says they must.

They are also buying from foreign nations, and the local producers, many of them, are selling to the Government stockpile and buying at the world price, which is about $41 for tungsten, I think, and $36 a unit has been the guaranteed price here.

So that the amount that is mined here has piled up. We are at the moment mining about twice as much annually as the annual consumption here; is that right?

Mr. HOLDERER. That is right.

Senator MALONE. And for 23 years we were taught we had no tungsten in this country. It is pretty hard to sell something that has been sold by an entire Government crowd, including your outfit, for that long.

Mr. SWEET. I haven't.

Senator MALONE. You have not, but the heads of your department up to this time, at least, and I never met your present head, have always said they did not have the material.

As a matter of fact, I picked up the paper and the national commander of the American Legion, who is one of the finest men I know,

Ed Wagner, said in Philadelphia in a speech last week that we had to send the GI's to the Middle East because the petroleum there was essential to our security.

We have more petroleum in this country in the Western Hemisphere than you can use in any foreseeable future. You do not need it all for national defense. There is a billion dollars worth of it.

If they put it on the basis of trade and keep the trade lanes open, American people want to go to war on that basis, I will go with them.

But now through the League of Women Voters, and through the American Legion, I do not think you will hear Ed make any more speeches about that the other way.

I asked him where he got the information and he said from the State Department. Well, I have not heard the State Department make that statement for some time and I do not think you are going to hear it for some time. If you can tell this country through an organization like the American Legion and the League of Women Voters that we do not have these materials, then you can come in and send 10 million more GI's throughout the world and that helps the unemployment situation, too.

Mr. RIVKIN. If I may interpose, sir, the materials program, going back to the first ECA Act, was not requested by the executive branch at all. It was provided for by the Congress, by congressional amendment.

Senator MALONE. You remember me, do you not; I was there.

Mr. RIVKIN. Then I am not telling you anything you don't know, sir.

Senator MALONE. No, I do not know that. Mr. Marshall, who was then Assistant Secretary of State, made the speech, and he said that we must do that, put out all these billions of dollars.

Now, Mr. Marshall, I do not think he knew that it was in his speech, but the Prime Minister of England took it on the first bounce and in 30 days told us how much it was going to cost.

In my opinion, there had been a lot of telephone conversations going on and he knew it was in the speech. Do not tell me that Congress took this up. They did not do it.

Mr. RIVKIN. I am not talking about the Marshall plan, as such, I am talking about the business of procuring strategic materials.

Senator MALONE. You know what outfit sold that to this country, Mr. Ickes sold it for 20 years, that we had no oil; we had no tungsten; we had no manganese, but he was always for repealing the depletion allowance on petroleum and if he had been successful he would have been out of petroleum.

Now you have oil running out of your ears. Now, that has all been sold since 1934 and it did not come from Congress. It came from the administration directly.

Mr. RIVKIN. That may be, sir. I was only going back to the record so far as the Marshall plan itself was concerned.

Senator MALONE. What is the record on the Marshall plan?

Mr. RIVKIN. The original Marshall plan did not include a minerals program or strategic materials program.

Mr. REDWINE. Mr. Chairman, that is all we have.

May the record show, Mr. Chairman, that we are in recess until 10 o'clock Wednesday, next Wednesday morning?

Senator MALONE. This is the first time I have met anyone from this new organization.

When was the name changed? Last year, was it not?

Mr. RIVKIN. July 1 last year.

Senator MALONE. Would you mind at the beginning of your statement when it is returned to you for correction, to just for the record give us the background of the ICA, just what organizations preceded it and where it originally started?

Was the Marshall plan the original start of it?

Mr. SWEET. Yes, sir; first, ECA, MSA, FOA, and then ICA.

Senator MALONE. What will it be next year? Do you have any new name you might use? The folks are beginning to catch up with it.

Mr. HOLDERER. Mr. Chairman, will they spell it out? I still don't know what MSA is.

Mr. SWEET. It was the Economic Cooperation Administration, the Mutual Security Agency, Foreign Operations Administration, International Cooperation Administration.

Senator MALONE. It has been substantially the same thing from the beginning of the Marshall plan.

Mr. SWEET. Carrying on the foreign-aid program, correct.

Senator MALONE. It has been doing substantially the same thing from the beginning.

Mr. SWEET. The program has gone through many changes, sir.

Senator MALONE. What changes? You gave away the money just the same. Was it in 1948 when you started?

Mr. SWEET. It started in 1948.

Senator MALONE. When you started the technical assistance program?

Mr. SWEET. Yes. That is another angle where there was another agency involved. The Foreign Operations Administration combined the former Mutual Security Agency and Technical Cooperation Administration, which was part of the State Department. That was the point 4 program. That was combined with FOA.

Senator MALONE. Would you have any idea what significance does the point 4 program have?

Mr. SWEET. I don't know why it was called the point 4 except it was in a speech of the President.

Mr. RIVKIN. It was the fourth point in President Truman's inaugural address in 1948.

Senator MALONE. Was it point 4 he was asking for in his speech? Is that where it originated?

Mr. RIVKIN. I think it was the fourth point the President stated would be part of the program of his administration in 1948.

Senator MALONE. That was a good deal like the Marshall speech. They started from the Marshall speech for the Marshall plan.

But Marshall never did contribute anything to it. You never heard from Marshall after the Harvard speech, or wherever it was, so far as I know.

Again, I remind you that I was right there all the time.

Mr. RIVKIN. I am aware of that, sir.

Senator MALONE. But we did hear from the Chancellor of the Exchecquer of England. In 30 days he told us what it would cost us which indicated that somebody had cooperated a little bit behind the scenes.

So there is no change now. As I understand it here, our taxpayers are paying for the engineers and technicians that go into these countries to develop their resources and then they can sell them on the open market any place they want to and so far we have been buying a good deal of this material for stockpiling.

Mr. SWEET. This, Mr. Chairman, I think you should discuss further with the GSA. It is the agency which is doing the buying.

Senator MALONE. We are familiar with GSA.

Mr. SWEET. We don't do any buying ourselves.

Senator MALONE. I understand, but am I right up to that point, that that is what you are doing? You are still trying to develop these natural resources, as far as minerals are concerned you are trying to develop their mines by helping them in their geology and their methods of mining, by paying for the engineers and technicians you send there.

Mr. SWEET. What I would like to do, sir, is submit to you a statement showing these technical assistance programs that are in the mining field.

Senator MALONE. Will they be worded like this one so that the only way you can understand it is to ask questions of the person who prepared it?

Mr. REDWINE. May I give a suggestion as to the form we would like it to follow?

Senator MALONE. Yes.

Mr. REDWINE. We would like you to show the nations, number of people, and what their duties are.

Mr. SWEET. Yes.

Mr. LOCKWOOD. In the minerals field?

Mr. REDWINE. The minerals field; yes.

Mr. SWEET. We will get you a statement.

(The information furnished is as follows:)

Technical assistance personnel engaged in ICA projects in the ferrous, nonferrous, and nonmetallic minerals field

Area and country	Project	Recruiting agency
A. Far East:		
Cambodia	1 mining geologist, adviser to ICA on mining problems in Cambodia-Laos-South Vietnam area.	International Cooperation Administration (ICA).
Formosa	1 minerals geologist, technical adviser to Government minerals agencies.	U. S. Geological Survey (USGS).
Indonesia	1 minerals geologist, technical adviser to country national planning bureau.	USGS.
Philippines	1 minerals geologist, chief adviser to ICA mission staff and to Philippine Bureau of Mines.	Do.
	2 minerals geologists, geological advisers to the Philippine Bureau of Mines.	Do.
	2 mining engineers, technical advisers to Philippine Bureau of Mines on nonmetallic minerals.	U. S. Bureau of Mines (USBM).
	1 mining engineer attached to mission staff, adviser to country bureau of mines on development of lateritic nickel ores.	ICA.
Total technical assistance personnel in Far East.	9.	

Technical assistance personnel engaged in ICA projects in the ferrous, nonferrous, and nonmetallic minerals field—Continued

Area and country	Project	Recruiting agency
B. Europe.[1]		
C. Africa and the Near East:		
Afghanistan	1 mining engineer,[2] technical adviser to Afghanistan Bureau of Mines on exploration for coal and other minerals.	USBM.
Egypt	2 minerals geologists, technical advisers to Egypt Geological Survey and Egypt minerals agencies.	USGS.
India	1 minerals geologist, technical adviser to Geological Survey of India.	Do.
	2 minerals geologists to deliver lectures and field trip instruction to advanced Indian geologists, 4-month assignments.	Do.
Israel	1 metallurgical engineer, adviser to Government of Israel on metallurgical problems.	USBM.
	1 mining engineer, chief mining adviser to ICA mission.	ICA.
	1 mining engineer, technical adviser to Israel mining industries on phosphate and copper mining problems.	USBM.
	2 minerals geologists, technical advisers to geological survey and Israel Mining Co.	USGS.
Liberia	1 mining engineer, technical adviser to Liberia Bureau of Mines and Geology on minerals matters.	USBM.
Libya	1 economic geologist, technical adviser to Ministry of National Economy.	USGS.
Nepal	1 mining engineer, technical adviser to the Government of Nepal of the investigation and development of minerals.	USBM.
Pakistan	1 mining engineer, adviser to the Government on the reorganization of the Pakistan Bureau of Mines.	Do.
	1 minerals geologist, adviser to the Government on the organization of a Pakistan Geological Survey.	USGS.
Saudi Arabia	1 minerals geologist, adviser to the Finance Minister, exploration and publication of the topographic and geological maps of the country.	Do.
Turkey	1 mining engineer, adviser to mission on minerals matters.	ICA.
Total personnel in Africa and the Near East.	18.	
D. Latin America:		
Bolivia	3 mining engineers conducting minerals industry survey.	Ford, Bacon & Davis.
Brazil	1 minerals geologist, chief of party adviser to mission on geology.	USGS.
	5 minerals geologists engaged in geological survey of Brazil ferrous and nonferrous resin as in cooperation with Brazelia Departmento Nacional de Producto Mineral (DNPN).	Do.
	1 mining and metallurgical engineer, technical adviser to D. N. P. N.	USBM.
Chile	3 minerals geologists, technical advisers to Chilean Government in the development of their Government geological agency.	USGS.
Cuba	2 minerals geologists, basic geologist research	Do.
	1 metallurgical engineer, technical adviser to the Metallurgical Laboratory of Banco de Fomento Industrial de Cuba.	USBM.
Mexico	5 minerals geologists, minerals resources investigations in cooperation with the Institute of Geology, University of Mexico.	USGS.
	1 metallurgical engineer, technical adviser to Metallurgical Laboratories of the Mexican Commission de Fomento Minero.	USBM.
Peru	1 minerals geologist, technical adviser to Geological Institute.	USGS.
	1 metallurgical engineer, technical adviser to the Metallurgical Laboratories and custom milling plants of the Banco Minero del Peru.	USBM.
Total personnel in Latin America.	24.	

[1] There are no minerals technicians stationed in the ICA European missions at present.
[2] This man, the adviser to ICA mission, devotes a principal part of his time to coal mining problems.

Summary of ICA technicians in field furnishing technical assistance in ferrous, nonferrous, and nonmetallic minerals field

Far East	9
Europe	0
Africa and the Near East	18
Latin America	24
Total personnel	51
Minerals geologists	30
Mining and metallurgical engineers	21

Senator MALONE. I am very glad I came down here in time to find you folks here.

We will stand adjourned now until next Wednesday.

(Thereupon, at 3:50 p. m., the subcommittee was recessed, to reconvene at 10 a. m., Wednesday, May 16, 1956).

EXTENSION OF PURCHASE PROGRAMS OF STRATEGIC AND CRITICAL MINERALS

WEDNESDAY, MAY 16, 1956

UNITED STATES SENATE,
SUBCOMMITTEE ON MINERALS, MATERIALS, AND FUELS,
OF THE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D. C.

The subcommittee met, pursuant to call, at 10 a. m., in room 224, Senate Office Building, Hon. James E. Murray (chairman) presiding.

Present: Senators James E. Murray, Montana; Alan Bible, Nevada; and Frank A. Barrett, Wyoming.

The CHAIRMAN. The hearing will come to order, please.

Earlier testimony before the committee has indicated that the Defense Department has been limiting manufacturers of aircraft in the use of minimum quantities of tungsten and columbium, despite the fact, as several witnesses have testified, these two materials are running out of our ears. The witness we have here today is expected to develop the justification, if any, for this situation.

Mr. Forry, will you please come forward?

Mr. REDWINE. Mr. Forry has a prepared statement, Mr. Chairman. In view of the fact that it has technical content, and, having just had an opportunity to glance at it, seeing that it unfolds the story very well, I suggest that in this case the witness read his statement first.

The CHAIRMAN. Very well.

Mr. REDWINE. Mr. Forry, before you start:

The committee realizes that in places your statement treads closely on sensitive spots so far as classified information is concerned. If any question is asked that does tread on such areas, you will have to be the judge of whether it is classified. We do not want any classified information. On the other hand, don't take refuge in classification insofar as answering an embarrassing question is concerned, please.

STATEMENT OF JOHN E. FORRY, OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE (APPLICATIONS ENGINEERING); ACCOMPANIED BY CARL ROLLE, OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE, SUPPLY AND LOGISTICS

Mr. FORRY. May I say before I start my statement, sir, I am concerned with interpreting our supply and demand situation in engineering terms for the benefit ultimately of aircraft and engine designers, and Mr. Rolle, who is here with me today, from our Supply and Logistics Office, is responsible for actually computing the supply and demand situation, so that if we get into questions dealing with that I will bow to him.

The general problem confronting this committee is a problem recognized by the Department of Defense as having an important bearing on the national security. If ways can be found of improving the supplies of critical materials available within the continental United States, it will be of unmistakable advantage to the Nation's safety. For this reason, I appreciate the opportunity afforded me of presenting to you at this time a brief summary of the manner in which the Department of Defense is approaching our side of the problem. I hope to emphasize properly the vital and close relationship between our activities and the subject of your present deliberations.

For we are engaged in a similar effort—to free ourselves as far as possible from the risky dependence on sources outside of our country's control for the materials of war, whether in the near or distant future.

It is our further responsibility to insure that these materials, critical to national security, wrested from the earth at considerable cost, are employed effectively so as to yield the maximum defense per pound. Since waste of material is worse than not having the material, this responsibility extends to preventing waste.

Six materials, columbium, cobalt, chromium, molybdenum, nickel, and tungsten have been of special concern to us because they have assumed such a preeminent place in the manufacture of our aircraft turbojet engines and have been troublesome in the past. Our mobilization requirements for these materials, only a few short years ago, were many times the quantity we could then expect to obtain. It is doubtful if any nation has ever moved as rapidly as this Nation has from perilous scarcity to reasonable adequacy in these six rather rare metals. In my opinion this improved materials situation relative to mobilization is due in no small degree to the vision and energy of this committee, working with like-minded people and agencies in both industry and Government.

The critical dependence of this country's security on its ability to build the required number of turbojet engines under mobilization conditions has led to some rather specific and precise guidance on materials usage being given to the jet engine designer. This guidance takes the form of a Department of Defense Instruction, signed by Hon. Frank D. Newbury, Assistant Secretary of Defense (Applications Engineering), for the use of the three military departments.

Since some portions of this instruction have been quoted in earlier hearings before this committee, may I respectfully request that the instruction be entered in the record in its entirety at this point.

The CHAIRMAN. It will be carried in the record at this point, as you request.

(The material referred to follows:)

DEPARTMENT OF DEFENSE

DIRECTIVES SYSTEM TRANSMITTAL

No. 4000.16, chapter 1, April 30, 1956

Attachments: Pages 3 and 4 of DoD Instruction 4000.16, July 14, 1955.

INSTRUCTIONS FOR RECIPIENTS

The following page changes to Department of Defense Instruction 4000.16, "Utilization of cobalt, nickel, chromium, columbium, molybdenum, and tungsten in military gas turbine engines (DD–AE (A) 216)", dated July 14, 1955, have been duly authorized:

Page changes:

Remove: Pages 3 and 4, July 14, 1955.

Insert: Pages 3, July 14, 1955, revised April 30, 1956, and 4, July 14, 1955.

Changes appear on page 3 and are indicated by double marginal asterisks. They are the result of two developments since July 1955: a change in the authorized basic concept as to expected duration of mobilization period, for planning purposes, and the addition of another year's purchases of the "designated materials" for the national stockpile. In order to maintain these target numbers on a strictly factual basis, additional changes will be announced as they occur.

MAURICE W. ROCHE,
Administrative Secretary.

4000.18
July 14, 1955 [1]

"Give first consideration, in designs and specifications for military equipment, to the necessity for mobilization readiness."

"Establish appropriate safeguards to prevent needless applications of critical materials from becoming established in newly designed equipment."

D. It is therefore the policy of the Department of Defense that the Secretary of each military department concerned shall assume responsibility for assuring that maximum effort is directed toward attaining optimum efficiency in the use of the designated materials in aircraft gas turbine engines. The military departments shall direct their efforts to attain the following objectives: [2]

1. That, except where performance would be prejudiced, each turbojet engine shall consume for its construction, on a gross weight basis, not more than 22 pounds of cobalt, 88 pounds of nickel, 166 pounds of chromium, 0.70 pound of columbium, 6.2 pounds of molybdenum, and 5.5 pounds of tungsten, for each 1,000 pounds of sea level static thrust delivered by the engine;

2. Specific target limits applicable to turboprop engines will be established at as early a date as is feasible. Pending establishment of turboprop target limits it is essential that the policies stated in paragraph IV–C above be energetically applied;

3. That limits for special engines or engines for special applications may be established as required;

4. That at the earliest practicable point in its development, each new engine is examined to determine the gross quantities of each of the designated materials required per 1,000 pounds of thrust or 1,000 equivalent shaft horsepower for its manufacture, and that specific action is taken to assure that in the further development of such new engines, it will be brought into conformity with the policy set forth above.

V. Procedures

A. Each military department shall report annually to the Assistant Secretary of Defense (Applications Engineering) the following:

1. For each production aircraft gas turbine engine model the using service will report:

(*a*) Current gross requirement per 1,000 pounds of thrust or 1,000 ESHP for each designated material.

(*b*) Gross-to-net ratio.

(*c*) Thrust or equivalent shaft horsepower.

2. For each development engine model the sponsoring service will report:

(*a*) The current net requirement per 1,000 pounds of thrust or 1,000 ESHP for each designated material.

(*b*) Comparable gross-to-net ratio.

(*c*) Thrust or equivalent shaft horsepower.

B. These reports to be submitted as of the last day of September. (This will permit proper review by the Assistant Secretary of Defense (Applications Engineering) to revise these limits at the beginning of each year.)

C. Report control symbol DD–AE (A) 216 has been assigned to this request.

VI. Action required

A. The Assistant Secretary of Defense (Applications Engineering) shall review progress in the implementation of this directive and maintain the quantitative

[1] Revised April 30, 1956.

[2] These target figures were supplied by the Office of the Assistant Secretary of Defense (Supply and Logistics) pursuant to the last two paragraphs of DOD Instruction No. 5129.10 dated September 29, 1954.

limits prescribed herein on an up-to-date basis in conformity with changing circumstances of availabilities and requirements in the designated materials.

B. Each military department concerned shall:

1. Initiate a program for the achievement of the maximum designated material requirements reduction possible for each model engine.
2. Submit the reports required by this instruction.
3. Coordinate its efforts to the extent practicable with those of each other military department in order to establish uniform implementation procedures.

FRANK D. NEWBURY,
Assistant Secretary of Defense
(Applications Engineering).

Mr. FORRY. Before commenting on some of the policies expressed in this guidance, let me state that the Department of Defense, which of course includes the three military departments, does not specify the materials which a designer of military equipment must use in his design. Rather, we depend on the judgment and ingenuity of the designer to select the materials which will provide the best performance possible.

One consideration in the guidance supplied by this instruction is that it provides for a balanced materials supply situation during mobilization. At no time does it reflect the current peacetime supply and demand.

A second consideration is that this instruction supplies a factual statement reflecting as faithfully as possible the mobilization situation in engineering terms that are ultimately of value to the jet engine designers.

A third consideration is that this instruction treats all jet engine critical materials consistently.

This instruction was issued in July 1955, based on the then current stockpile, the then current war duration plan, and the then current mobilization requirements. Since the issuance last summer almost a full year's further activity in stockpiling certain materials has taken place, and certain changes in the war duration plans have occurred. We have recently adjusted the target numbers included in this instruction to reflect the changing situation. For example, the target number for tungsten in the July 1955 issue was 4.6 pounds of tungsten per 1,000 pounds of thrust. Under these changed conditions you may be pleased to know that the target number has been recently increased to 5.5 pounds per 1,000 pounds of thrust. The target number for columbium was 0.35 pounds; now it is 0.70 pounds per 1,000 pounds of thrust.

Senator BIBLE. In connection with that, what was the date of that change?

Mr. FORRY. April 30 of this year.

Senator BIBLE. That is recent, then.

Mr. FORRY. Yes, it is recent. And it was generated by an examination which was completed on March 22 by Supply and Logistics, summarizing the changed situation in these materials, sir.

Mr. REDWINE. To keep it consistent at this point, may I ask a question, Mr. Chairman?

The CHAIRMAN. Surely.

Mr. REDWINE. Just what does that mean in poundage or tonnage for that increase, on a plane?

Mr. FORRY. Well, sir, you have anticipated me, actually. I was just going to remark what these figures mean in terms of pounds of materials in typical jet engines, in the next paragraph.

These figures, in this form, do not appear impressive. But in a typical modern jet engine, they amount to approximately 80 to 100 pounds of tungsten, 10 to 12 pounds of columbium, 1,300 to 1,600 pounds of nickel, 2,500 to 2,800 pounds of chromium, 90 to 110 pounds of molybdenum, and 300 to 400 pounds of cobalt—a total of some 4,000 to 5,000 pounds of critical material per engine, not including spare parts.

Mr. REDWINE. May I ask this question, Mr. Forry: What poundage is used in the frame of these materials? Do you have that?

Mr. FORRY. Mr. Rollé may be able to give you some information on the breakdown within the engine itself.

Mr. REDWINE. Please go ahead.

Mr. FORRY. These target numbers are the engineering terms in which the guidance is couched. However, care must be taken to note all of the policies surrounding these numbers and the ways they are to be used. For example, on page 2 of the instruction, paragraph IV B announces the following policy:

> In the achievement of materials conservation objectives, it is not envisioned that any action be taken which will result in the impairment or reduction in the performance of the engine.

And again on page 3, paragraph IV D (1)—

> that, *except where performance would be prejudiced*, each turbojet engine shall consume * * *. [Italics for emphasis.]

Thus, it is clearly stated that the target numbers are not mandatory ceilings.

It is interesting to compare the current use of critical materials in jet engines with the target numbers as an indication of the mobilization situation in which we find ourselves at this time. Averaging all of the engines for which production requirements would exist under mobilization, none of these target numbers are being exceeded for any material. With respect to tungsten in particular, we have no reported instance in which the present target for tungsten is exceeded. Again, the average of all engines reported shows a use of tungsten less than 50 percent of the target number. Thus, we in effect are telling the military departments and the industry that they can more than double their present use of tungsten if better engines would result, without creating mobilization problems.

Senator BIBLE. Specifically, what does that mean? Would you spell that out for us?

Mr. FORRY. It means, sir, that the uses that have been selected by the aircraft engine designers, the uses of tungsten, are less than half, actually, of this target number that I read back over here, of 5½ pounds per 1,000 pounds of thrust. There is that difference between those two numbers, in effect a factor of about 2½ or so, over 2 at least, which represents room for the aircraft designer to move in, to use larger quantities of tungsten if he so desires, to improve the performance of his engine. If he has any reason for doing it at all, he is free to do so.

Mr. REDWINE. But after he designs that engine, your department has to approve it, does it not?

Mr. FORRY. Well, let me say this. We do not specifically approve the choice of materials. We work in the other way, of just general guidance to the industry designer, so that he will choose materials that fall within the pattern that our overall supply and demand indicates is appropriate.

Mr. REDWINE. In that connection, Mr. Forry, let us go back to page 2 at the top of the page, first paragraph. One would gather from that paragraph that cost is really not a factor. And I have specific reference to testimony we have had at other hearings in respect to titanium. The manufacturer says, "I am not permitted to use titanium. The Defense Department won't let me use it, on account of the cost factor." Now, does the cost factor come into the material that the man uses? Or is it performance only? What are you interested in? Performance, cost, or both?

Mr. FORRY. In our materials program, we are primarily interested in performance, sir.

Now, I have an additional statement on titanium, if you would like to explore that later, sir.

Mr. REDWINE. After this is over, yes.

Mr. FORRY. Have I answered your question?

Mr. REDWINE. Yes. Go ahead.

Mr. FORRY. It has been suggested by some that these target numbers may have had a depressing effect on research into larger scale uses of the critical materials; for example, columbium and tungsten. If this is the case, any such actions by research managers is contrary to the expressed policies of the Department of Defense. In the fall of 1955 responsible personnel of the aircraft jet engine industry and important suppliers of materials for that industry attended a meeting in the Pentagon for the purpose of emphasizing and explaining the instruction under discussion now. The aircraft jet engine industry was told in part as follows:

One policy should be made unmistakably clear: no gains in conservation of materials should be made at the expense of engine performance. In our instruction to the military departments we are explicit on this point. The instruction reads:

"In the achievement of materials conservation objectives it is not envisioned that any action be taken which will result in the impairment or reduction in the performance of any engine."

This policy, be it understood, applies not only to existing designs; it also includes proposals for new uses of materials. If a new and richer alloy will produce better performance in an engine, nothing in the instruction or any directive of the Department of Defense stands against it.

It follows from this policy that you need feel no restrictions in your research programs, on the experimental use of any material * * *. Research should never be bound by current supply-demand conditions; if it is worth while to do so, we can always attempt to change these conditions, if we have enough time and warning * * *. It is desirable that industry try to keep prepared at all times to exploit fully all favorable developments in the changing balance of materials supply. Thus, the atomic-energy program is yielding a considerable supply of surplus vanadium as a byproduct; can this material be more widely employed in jet engines? A modest surplus of tungsten is at hand and a larger surplus is in prospect; can industry usefully employ this additional quantity of tungsten in high-temperature alloy? Cobalt in the past has been one of our most critical materials; it will probably never become a competitor of nickel—with respect to quantity—but new developments in ceramic tool points and carbide binder materials may free some cobalt for other uses and perhaps the engine industry can arrange to make efficient use of this addition to supply when it eventuates. Preparedness of this sort implies a degree of technical flexibility coupled with an increased willingness to accept change that we have not achieved in the past. But I believe a positive effort in this direction would be justified.

This is the end of the quote from the meeting last November, and these were the words that were told to the leading jet engine companies and materials suppliers.

Mr. REDWINE. Was that an oral proposition, or was it a directed issue, furnished them to that effect?

Mr. FORRY. There was a meeting held, and these thoughts were expressed orally. They were then reduced to paper and mailed to each of the attendees at the conference.

Mr. REDWINE. Thank you.

Mr. FORRY. In addition to urging the industry to engage in materials research without regard to target numbers, the Department of Defense itself sponsors a substantial materials research activity. In fiscal year 1956 over $75 million—this includes an estimated $50 million under end-item projects—will have been obligated on materials research and development, and a similar amount is planned for fiscal year 1957.

Senator BIBLE. Exactly what do you do under that type of project? You say you have $75 million obligations on materials research.

Mr. FORRY. Let me point out that, of this $75 million, approximately $50 million of that appears under end items, in the sense that the purchase of a new airplane or engine or some ground equipment will have as part of it research and development on materials to go into it and make it a better machine. And the remainder represents direct contracts with various institutions, both industry and educational, to engage in research in materials.

Senator BIBLE. That is defined as alloys for jets particularly?

Mr. FORRY. No, sir; it is for all military equipment.

Senator BIBLE. For all types of defense uses?

Mr. FORRY. Yes, sir.

Senator BIBLE. Thank you.

Mr. FORRY. We have seen that these target numbers are not mandatory ceilings. They are not limits. No penalty of any kind is imposed on manufacturers who exceed them. No reward is given to those who live within them. They are not even to be used as guides for the direction of research. Then why have them?

They provide a standard of availability of materials for the guidance of the aircraft and aircraft engine industry. They tell the industry designer: this is the quantity of materials that our national policies to date have been able to provide you under conditions of mobilization. This is all that would be available under such conditions unless and until changes in policies can come to fruition.

This is the only way the military departments and the engine industry now have of knowing what quantities of these critical materials would be available—in terms they can apply to their own engineering practice. Because these numbers are based on a factual picture of the supply and demand under mobilization conditions, they are in full consistency with our general responsibility for preserving a soundly based posture for the defense of our Nation. Any change in mobilization availability or military requirements brings a corresponding change in the target numbers.

That is as we have seen on this April 30 change.

The policy of the Department of Defense with respect to jet engine materials, will continue to be to encourage and sponsor, as appropriate,

research into materials and combinations of materials which will improve the quality of our weapons and equipment. When the results of such research show promise and the overall Government policy with respect to materials has not resulted in a corresponding supply for defense needs, we will, of course, urge the Office of Defense Mobilization to take all useful steps to change and improve the Government policy.

To summarize briefly:

1. There are no Department of Defense policies which place mandatory ceilings on the use of materials in jet engines.

2. The Department of Defense provides standards of jet engine critical materials usage in engineering terms based on mobilization supply and demand. These standards may be exceeded at the discretion of the designer and the usual criterion for this is improved performance.

3. The Department of Defense encourages and sponsors research in jet engine critical materials without regard to their target number.

I opened this statement with an acknowledgment of the services of your committee in improving defense supplies of these materials. There is no doubt in my mind as to the strategic value of this improved availability. We are entering the high temperature age and these are high temperature metals. The jets, turboprops, ramjets, rockets and guided missiles of our rapidly expanding arsenal will inescapably require additional quantities of all of them. We will do our part by using each as effectively as we know how.

The CHAIRMAN. Are there any additional questions?

Senator BIBLE. Mr. Chairman, I might like to ask a few questions of Mr. Forry. I think he has made a very able statement here, and I think he has been very valuable to our committee in evaluating this materials program.

I am interested in the first conclusion you reach, where you say you do not place mandatory ceilings on the use of materials in jet engines. As I understand it, on April 30 of this year, 1956, you issued this directive stating that—

> Each turbojet engine shall consume for its construction, on a gross weight basis, * * * 5.5 pounds of tungsten—

pointing it to tungsten—

> for each 1,000 pounds of sea level static thrust delivered by the engine.

Now, is that not a mandatory requirement?

Mr. FORRY. No, sir; it is not mandatory, because these target numbers may always be exceeded, if the performance will be improved.

Senator BIBLE. Pardon my interruption. Does this instruction say that? The staff members just called my attention—maybe it is included within this exception under D 1 on page 3—that except where performance would be prejudiced, each turbojet engine shall consume for its construction, on a gross weight basis, this says "not more than * * *." Who determines whether the performance will be prejudiced? You say that is the exception that will permit the use of more than 5 pounds of tungsten. You are pointing to tungsten, which, as you are well aware, is one of the real problems that this committee has before it, because of the fact that the present program is about to run out. It is just that simple.

Now, specifically what does that mean? In what instances do you exceed 5.5 pounds, or 4.6, as it was under the prior thing?

Mr. FORRY. I can only repeat again that where performance would be improved by exceeding the target number, there is no pressure to stay within it.

Now, I have some statistics, which I can quote in rather general terms, with regard to our present usage compared to targets. I cannot be specific, because of classification reasons, but I would like to point out that in some materials, not tungsten, there are engines which use as much as 320 percent of the target values.

Now, again I would like to point out that that is not the average usage of all the engines which go into our mobilization schedule, our mobilization program. However, there are always these special cases of individual engines which do penetrate these target numbers. Because the engine designer found that he could obtain performance benefits by doing so.

Senator BIBLE. As a matter of fact, has the industry or experimentation under the guidance of Defense discovered any substance that is a substitute for tungsten, because of its high melting point? Is it the highest melting point?

Mr. FORRY. Yes, sir; I am sure it is. As you recognize, sir, the engineering choice of materials is based on a number of their characteristics, and the features they add to alloys; so that there are several materials in this general class which are very useful and important to the jet engine designers.

Senator BIBLE. And does the increased permissive use, if I may use that term advisedly, of tungsten, to the extent of 5.5 pounds, as I understand you, as contained in this directive of April 30—let me rephrase that. How much will that increase the total use of tungsten?

Mr. FORRY. Sir, I am not in a position to estimate that. That of course is a matter of the choice of the engine designer to do so.

As I pointed out, we at this time are using less than 50 percent of the five and a half pound target.

Senator BIBLE. Do you have any information, as to the amount of the use of tungsten that the aircraft manufacturers make since your directive of April 30? Have they build it up to 5.5 pounds, or have they requested a higher use?

Mr. FORRY. No, sir; I have no information that there has been any immediate effect. Of course, timewise, it is a very short period of time.

Senator BIBLE. That is only about 15 days ago.

Mr. FORRY. Yes, sir, and the effect would be slow in coming. As you well know, there is a long design lead time on materials into production equipments.

Mr. FORRY. Essentially, it is a matter of proceeding to do so. And the military departments may have somewhat different methods of dealing with it specifically, and I would like to, if I may, sir, provide you an answer on that, so that it is clearly understood, if I may, in writing, later.

Senator BIBLE. I asked the question just so that I might be clear myself as to the mechanics of doing it.

Mr. FORRY. Rather than risk confusion.

Senator BIBLE. I think it is perfectly all right that that answer be supplied for the record.

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Mr. REDWINE. May I suggest this: Give us that answer in respect to an engine that has already been approved, that is now in production. He wants to make a change. Also, one that is on the drawing board now, and he wants to write in additional amounts of tungsten. Break it down as to what the procedure would be in both instances, please.

Mr. FORRY. Yes, sir.

Mr. REDWINE. As a matter of fact, Mr. Forry, this new order is not going to have any effect for a long time in the consumption of tungsten in military aircraft; is it?

Mr. FORRY. Recognizing the long lead time in design, that is certainly correct.

Mr. REDWINE. In other words, since April 20, if that is the date——

Mr. FORRY. April 30.

Mr. REDWINE. April 30. The designer that is now designing a plane that will go into production 3 years from now, 2 years from now, can use increased amounts of production. The man that is in production now is not going to change his designs, is he? And he would have a lot of trouble, if he did, in getting approval, would he not?

Mr. FORRY. Not in getting approval, sir. If the performances were improved, that would be the reason he would want to change the design in the first place to make use of any particular material. It would be on the basis of improvement in performance of the product.

Mr. REDWINE. Does improved performance include longer life of a particular product that is used?

Mr. FORRY. Yes, sir. We would consider the performance of the product included the service life. That becomes a very important feature in some cases.

Mr. REDWINE. It can become the big factor in cost, can it not?

Mr. FORRY. Yes, sir.

Mr. REDWINE. Well, what would happen to the manufacturer who is now under contract? He is supplying you with an engine. He wanted to increase the use of tungsten by a hundred percent, we will say. What would happen to his contract price, assuming that the material he was now using was less costly than the tungsten alloy that he wants to use? How would he go about negotiating a higher price under his existing contract?

Mr. FORRY. I am not competent to speak to the business side of the Department of Defense activities.

Mr. REDWINE. Well, could it be done?

Mr. FORRY. Yes, sir. And if you like, we can arrange to supply that information to the committee.

Mr. REDWINE. And has it been done, also? Or has it ever been done, or has it ever been turned down? Has the occasion arisen? If it has not, then what would be the policy?

Senator BIBLE. Yes. I was going to develop a question along the same line.

Mr. REDWINE. Just to clear the record as to the statement that you made, "except where performance would be prejudiced," can you supply for the record examples of where an aircraft manufacturer has asked for an increased use of tungsten as an alloy and has been denied the request by Defense?

Senator BIBLE. Likewise, if my memory serves me well, there was either a release from Defense or a directive from Defense—I do not know exactly what form it took; not too long ago— saying that the Department recognized the great need for tungsten, and that it was too bad that it could not increase its uses, because it was in short supply.

I am sorry I do not have that before me.

Mr. FORRY. I do not recognize that, sir.

Senator BIBLE. It seems to me that that was some type of a Defense release. They recognize the tremendous need for tungsten in the aircraft industry primarily, in guided missiles, and they were regretful that it was still in short supply.

Mr. FORRY. I do not have any recollection of that. Several years ago, and I am sure you are aware——

Senator BIBLE. This was within the last 4 or 5 months.

Mr. FORRY. If we could have any reference to it, we would be glad to check it up.

Senator BIBLE. I will see if I cannot pin it down and ask for your comments on that in writing.

(Later Mr. Forry supplied for the record the following amplified answer to the preceding nine questions:)

ANSWER

Changes in engine design are handled differently, depending upon whether the engine is under development or is a production model.

In the case of a developmental model, the contractor requires no approval before making a change in design although in practice he may notify the military project officer that he is doing so. Should the change involve increased usage of some material the fact would be noted for information, but would not require any prior approval.

No recent case has come to the attention of either the Air Force or the Bureau of Aeronautics involving proposed increased use of tungsten in a developmental engine.

In the case of an engine under contract for current production, any engineering change requires prior approval of the appropriate military department. Minor changes are usually acted on by the resident military plant representative; major changes are referred to the appropriate department for consideration. Any change of such consequence as to involve a substantial alteration in material content of an engine would probably fall in the latter category.

It should be noted that any proposal by a contractor to use more of some material in an engine would be embodied in a proposal for an "engineering change." The proposal would describe the engineering change, explain the reason for making the change (usually some sort of improvement in performance), what its cost would be, the change in material usage, if any, and other relevant factors. It is during consideration of the engineering change that increased contract prices resulting from the change are established and accepted. The department reviewing the change would make its decision to accept or reject the change after due consideration to all of the factors cited. In all cases where performance is a consideration it is the predominant or overriding consideration.

Performance is a rather broad term. It includes thrust, specific fuel consumption, specific weight, durability, maintainability, Mach number limitations, and other aspects of serviceability in operational use. In general, it includes all the features or characteristics expected of that engine by the using service.

Proposals for engineering changes in production models are being made, reviewed, and decided upon constantly, on a day-to-day basis, by the military departments. The procedure is well established. Neither the Air Force nor the Bureau of Aeronautics has encountered any recent proposal for an engineering change in any production engine in which increased use of tungsten has been an issue.

Should any proposal for an engineering change involving increased use of tungsten, or any other material, be made by a contractor, the proposal would

naturally be considered on its merits. The overriding consideration, as has been testified, is that of performance. The main determining factor, in other words, is how badly the change is needed. The project group handling a particular engine would study the proposed engineering change from the points of view of performance, cost, significant changes in critical material usage, effect on the engine-airframe combination, producibility, and so forth. If a proposed engineering change in a production engine is related to its performance in an airframe, and if a level of performance to be expected from the engine-airframe combination has been established, and if the engineering change has to do with achieving this level of performance, the change would almost certainly be adopted.

It is always difficult to make absolute statements about future engineering decisions, which are complicated matters involving many considerations, each of which has to be given its appropriate weight. But, generally speaking, any suggestion that tungsten has been systematically excluded from jet engines is wholly unwarranted. We have found no case pending, or recent, of a proposed engineering change in any engine, production or developmental, involving the issue of increased use of tungsten; certainly no instance of such a proposal being rejected; and certainly, again, no instance of such a proposal being rejected because of increased usage of tungsten. On the contrary, we have made it clear to the engine industry that substantially increased usage of tungsten would create no supply problem in time of mobilization.

Mr. REDWINE. Directing your attention to these Department of Defense instructions, on page 3 under D, which starts off—

It is therefore the policy of the Department—

and then under 4, the last three lines, I read:

And that specific action is taken to assure that in the further development of such new engines, it will be brought into conformity with the policy set forth above.

Then turn to the back page. And under "Action required":

B. Each military department concerned shall:

1. initiate a program for the achievement of the maximum designated material requirements reduction possible for each model engine.

Would you discuss those two quotes, sir, as to just what they mean and how they tie into each other?

Mr. FORRY. Paragraph D 4, refers of course to the policy stated, included in paragraph D 1, and therefore it embraces the thought that performance should not be prejudiced. And again the action required, paragraph B 1, carries with it the same policy guidance by incorporation, and the effect of that is to merely urge or direct the departments to urge a program which does not use materials uneconomically. That in essence is the net result of those two statements as I read them, sir, as I intend them.

Mr. REDWINE. Mr. Forry, from what source does the Defense Department obtain its information as to what materials are in plentiful supply, or short supply?

Mr. FORRY. If I may, sir, I would like to defer to Mr. Rolle on that.

Mr. REDWINE. Mr. Rolle, would you identify yourself for the record, please?

Mr. ROLLE. Yes. I am Carl Rolle. I am in the Office of the Assistant Secretary of Defense, Supply and Logistics. That, for explanation, is the element of the Office of the Secretary of Defense roughly corresponding to what at one time was called the munitions board. It has now become an Assistant Secretary of Defense's office.

We must keep in mind that all of this guidance and setting of targets, discussion of requirements and supply, is in terms of condi-

tions of mobilization, not necessarily today. It is conceivable that there might be materials in plentiful supply today but which would be in critical condition come a war.

The present central responsibility in the administrative branch of the Government, for mobilization planning in the broad sense and for evaluation of our mobilization readiness, is, as you probably know, in the Office of Defense Mobilization. And under their leadership, there are periodic reviews of the anticipated mobilization situation with regard to not only these 6 materials but 60 or 80 more.

That is necessarily an interdepartmental affair.

The Department of Defense estimates its direct requirements, based on anticipated schedules of production of the various items, the bills of material as they now exist for those items, the need for replacement parts, and that sort of thing.

Mr. REDWINE. Let me interrupt you there. Mr. Forry's department says—I am asking this as a question—that next year they will need 100 pounds of columbium, we will say. Then it is up to you to find out whether that quantity is available; is that correct?

Mr. ROLLE. Substantially, except that those estimates of requirements come to us directly from the Army, the Navy, and the Air Force.

Mr. REDWINE. I mean from the appropriate military agency.

Mr. ROLLE. That is right.

Mr. REDWINE. All right. Then where do you get that information as to whether it is available?

Mr. ROLLE. All right. You mentioned next year. Actually, those estimates are in terms of what they would need year by year in the event of war.

Mr. REDWINE. For the duration, whatever that figure might be.

Mr. ROLLE. Phased out, timewise, and based not on current production programs but on mobilization production programs, which of course would be substantially higher than what is now being produced in the way of airplanes and the like.

Mr. REDWINE. Well, let me ask you this: Are you officially aware that last year we produced domestically some 50 percent more tungsten than was consumed?

Mr. ROLLE. Definitely.

Mr. REDWINE. You are officially aware of that?

Mr. ROLLE. Right.

Mr. REDWINE. Where did you get that information?

Mr. ROLLE. I got that information—well, of course, one source is the reports of the Bureau of Mines, who report both production and consumption statistics. But in making these mobilization studies, there is brought together on one piece of paper historical data up to as late as it could be obtained, on both production, including domestic production, foreign production, imports into the United States; and consumption, and what it was used for.

Then that picture is projected into the future, under conditions of mobilization. The estimates of supply availability in the minerals area are obtained principally from the Department of Interior. The estimates of requirements are built up from a number of bits and pieces. The Department of Defense estimates its requirements. The Department of Commerce and other civilian agencies estimate the mobilization needs of the general economy and the supporting industries, which would be necessary.

And that gives us the picture substantially on one piece of paper. With each department feeding in the information which it is considered most expert to develop, and by sitting around a table and reviewing the whole thing and putting it together, we come up with the best picture that can be drawn of what the supply and the requirements situation will be.

Now, one use to which that study is put, obviously, is the establishment of the necessary stockpile level.

The Department of Defense in turn, and based on the assumption that a war might come tomorrow, next year, or the year after, can make any analysis we want. For my office to give Mr. Forry's office the proper guidance in this area and in other areas, where they keep in touch with and attempt to guide the uses of materials in military equipment, we will compare the mobilization supply and requirements situation on this basis: that we and the balance of the Nation have certain requirements, as heretofore stated, and there are expected to be available certain supplies including, for the purpose of our comparison, the amount that exists or is expected to exist in the stockpile as of the beginning of the war. In other words, we are not trying to compute a deficit or compute what needs to be in the stockpile. We are trying to get a picture of the situation including what is in the stockpile, or what is coming in between now and the hypothetical date we are talking about.

Mr. REDWINE. Mr. Rolle, Senator Murray and Senator Bible are due over on the floor in just 10 minutes; so I believe you have pretty well covered that field.

I would like, Mr. Chairman, to ask Mr. Forry just one more question, if I may, please.

Mr. Forry, on page 3 of your statement this morning, the first paragraph that begins on that page, the last four words: "without creating mobilization problems." Just what do you mean by that?

Mr. FORRY. We were merely recognizing that when engine manufacturers exceed the target numbers, for cause, they do create certain problems for us; that we must then recognize the deficiencies that are created by exceeding target numbers.

Mr. REDWINE. I am sure that Senator Bible will be interested in knowing how you are going to create a problem in connection with tungsten, when you have it running out of your ears.

Mr. FORRY. Well, Mr. Rolle did emphasize the fact that these are all based on mobilization conditions, and that mobilization quantities may run from 5 to 10 times the quantities that are used under a current peacetime use pattern.

Senator BIBLE. Of course, you are aware of what the current production of tungsten is. I assume both of you gentlemen are. At least Mr. Rolle is. What was the production last year? Some 900,000 units? Is that roughly correct, domesticwise?

Mr. REDWINE. 16 million pounds. It is in pounds they carry it.

Senator BIBLE. 16 million.

Mr. HOLDERER (George Holderer, committee engineer). And consumption, eight.

Senator BIBLE. Consumption, eight. So there seems to be no short supply of tungsten.

How does that affect your thinking? That is the thing that is baffling me, Mr. Rolle.

Mr. ROLLE. Yes. Specifically as to tungsten, the mobilization requirements, as compared to what will be available, considering what is coming into the stockpile and is available in the stockpile, show that there will be more than we need. And that is why the target number that we compute and give Mr. Forry's office actually is double what the engine manufacturers are now using. In other words, they could use more than they now are using without creating a mobilization problem.

Mr. REDWINE. Let me ask you one more question, Mr. Rolle. If ODM tells you that there is a limited supply of material on hand, and your needs are estimated to be much greater than the supplies on hand, do you then ask them to take steps to increase the domestic production of that particular material? Or what do you do?

Mr. ROLLE. We actually don't have to ask ODM to take any particular action, because the responsibility is theirs anyway, by law. The action they take may be in the nature of increasing domestic production, or it may be in the direction of increasing the level of the stockpile. Now, that in turn might create a demand for more domestic production. You may accomplish both.

Mr. REDWINE. As a matter of fact, increased domestic production is the best thing for the country, is it not, to avoid a cutoff during times of emergency from overseas supplies?

Mr. ROLLE. It is if you can increase it and keep it going until this hypothetical war starts. The problem frankly that ODM has there is that if they increase this so-called mobilization base, increase our domestic production, what device do they use to increase it? And if this war does not come for 5 or 10 years, can they keep it there? Can they keep this device in being?

The CHAIRMAN. If this has not been satisfactorily cleared up, you can present a further statement for the record if you feel that you have not covered it.

Mr. REDWINE. And, Mr. Chairman, may the staff ask clarifying material on it, too, of these gentlemen, after the recess?

The CHAIRMAN. Very well.

Senator BIBLE. Might I ask just one question before you adjourn, Mr. Chairman?

I realize we go into session at 11 o'clock this morning.

Does the instruction or directive of April 30, just 15 days ago, by Defense, indicate increased defense needs for these strategics when you increase the amount of use which is permitted in these engines?

Mr. ROLLE. That does not necessarily reflect increased needs, no, sir. It simply reflects increased tolerance of use, that they can with good reason use more.

Senator BIBLE. But if the aircraft industry again, specifically pinpointing tungsten, built up their use from 4.6 pounds to 5.5 pounds, that would certainly result in an increased defense requirement, would it not?

Mr. ROLLE. It would, sir. But the reason we give them the 5.5 is that in our best estimation we could tolerate a demand of 5.5 with no special action to support it. In other words, the available supply now appears to us to exceed what would be used, what would be needed, based on present use patterns; that there is room for them to move. And keep in mind that they are not even using the 4.6—they are only using about half that.

Senator BIBLE. Statistically, they only use about half that.

Mr. ROLLE. Yes, per engine.

Senator BIBLE. Per engine.

Mr. ROLLE. Prior to April 30, they have had room to move, in tungsten.

Senator BIBLE. Yes. I think I understand your answer, Mr. Rolle. Thank you.

The CHAIRMAN. You are free to submit any further additional material you wish to the committee.

That concludes your testimony, and this concludes the taking of technical testimony by this committee.

Witnesses who will follow represent the policymaking level of the administration. The committee has been requested by Mr. Felix Wormser, Assistant Secretary of the Interior, policymaking group, to give him and his associates an additional week in which to formulate and formalize the administration's 1956 minerals policy, with the assurance that in that length of time he will be able to furnish the committee with the Department's report and recommendations on the legislation under consideration.

For that reason, the hearings are now continued until 10 o'clock Thursday, May 24.

(Whereupon, at 10:56 a. m., the hearing was recessed, to reconvene at 10 a. m., Thursday, May 24, 1956.)

EXTENSION OF PURCHASE PROGRAMS OF STRATEGIC AND CRITICAL MINERALS

THURSDAY, MAY 24, 1956

UNITED STATES SENATE,
SUBCOMMITTEE ON MINERALS, MATERIALS, AND FUELS,
OF THE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D. C.

The subcommittee met, pursuant to recess, at 10 a. m. in room 224, Senate Office Building, Senator James E. Murray (chairman) presiding.

Present: Senators James E. Murray, Montana; Alan Bible, Nevada; George W. Malone, Nevada; and Frank A. Barrett, Wyoming.

Also present: Senator William Langer, North Dakota.

The CHAIRMAN. The hearing will come to order, please.

The witness this morning will be Mr. Donald A. Quarles, Secretary of the Air Force, who it is hoped will be able to enlighten the committee as to why the Air Force and other defense agencies continue to inhibit the usage of tungsten and certain other materials in the manufacture of aircraft engines and frames when the necessity for such limitation of use, if it ever existed, no longer exists, because of increased domestic production.

When arrangements were made for Secretary Quarles to appear today, assurance was given him that he would be released not later than 11 o'clock, so we will undertake to expedite the hearing this morning.

I am sure that the cross-examination will not be prolonged and that the questions will be to the point so that we may not have a delay.

Mr. Secretary, we are very happy to have you here today, and I am sure that your statement will be of great help to us. If you have a prepared statement, you may follow it or proceed in your own way.

STATEMENT OF HON. DONALD A. QUARLES, SECRETARY OF THE AIR FORCE

Secretary QUARLES. Thank you, Mr. Chairman. I do not have a prepared statement, but I would like to state briefly the Air Force position in this matter and then, of course, respond to any questions that may be directed to me.

First, I would like to say that the Air Force does not follow a policy which inhibits the use of tungsten or other alloy and structural materials in our designs. We do, along with the other military departments, follow a policy of defining to designers certain target levels for the use of these critical materials, but we make it very clear to them in the first place that these are not limitations on them under present conditions; they are merely an indication of the situation that

designers should expect to exist under mobilization conditions and, therefore, an indication to them of the relative availability of these critical materials under heavy usage conditions.

In spite of these target levels for the use of such materials as tungsten and columbium and others, we welcome any proposals from our design contractors as to how they might to advantage use these materials even in greater quantities than the target levels and, so far as I am aware, we have never prevented them from proceeding with uses that they proposed and that, on analysis, seemed to produce worthwhile results in our designs.

Tungsten, of course, can be used in many ways, and to some extent it is interchangeable in alloy use with other materials. Our target numbers do in fact guide our designers in the selection of these materials according to their availability or, conversely, their potential scarcity under mobilization conditions, as I think it is very essential in our designs that we not only meet the conditions prevailing today but that we be prepared to carry on with our design under much larger production conditions and much more difficult production conditions that we might encounter under mobilization.

I think, Mr. Chairman, in very general terms, that is a statement of our position in the Air Force, and I belive it is fair to say that it is a statement of the armed services' position.

Just to clarify the matter, I might go on to say that within the executive branch of the Government we operate by having the military departments as claimants or users of these materials state their needs to the Office of Defense Mobilization and look to that Office to pull together the needs of all other users and the potential supplies of these critical materials, the availability of them, and through the general studies of the Office of Defense Mobilization, executive branch standards are developed and policies are developed so that the target numbers which I earlier referred to are, in effect, the outgrowth of these broader studies and considerations developed by the Office of Defense Mobilization.

However, I should not like to imply that they have inhibited us, because actually, under present conditions, we do not feel inhibited from the valid application of these critical materials in our design.

The CHAIRMAN. Mr. Redwine, of our staff, would like to ask a few questions.

Mr. ROBERT W. REDWINE (assistant counsel). Mr. Secretary, with respect to the availabilty of tungsten and relating the availability of tungsten in 1956, 1955, and 1954 to the directive of April 30 of this year increasing the target figure, wasn't tungsten available in large quantities in 1953, 1954, and 1955?

Secretary QUARLES. I think it is a fair statement, Mr. Redwine and Mr. Chairman, that tungsten was available in substantial quantities throughout this period, although it was only, of course, the termination of hostilities in Korea and after we felt quite sure of the level of defense production that one could also be sure that tungsten was available in the needed quantities.

Mr. REDWINE. As a matter of fact, for the last 2 years, domestic production has been approximately twice the consumption; has it not?

Secretary QUARLES. That is my general information; yes, sir.

Mr. REDWINE. The directive of April 30 replaced a directive which was issued in 1950, did it not, Mr. Secretary?

Secretary QUARLES. I believe that is correct, although the numbers are not immediately familiar to me. Mr. Forry, is it correct that the latest directive is April 30?

Mr. JOHN E. FORRY (Assistant Director, Office of Aircraft and Marine Craft, Office of the Assistant Secretary of Defense). That directive is a modification of that of July 1955, sir.

Mr. REDWINE. The directive of 1955. Then what did it replace?

Mr. FORRY. The earlier directive which you mentioned——

Mr. REDWINE. Of 1950. What was the change between the 1950 and the 1955 directive, if you please?

May the record show that this is——

Secretary QUARLES. Mr. Forry of the Office of the Secretary of Defense.

If you are asking factual questions, I would like to consult the documents, for I think we have the answer readily available.

Mr. REDWINE. We are pressed for time and that can be supplied later.

Secretary QUARLES. We will supply that for the record; thank you.

(The information to be furnished follows:)

No. 4000.16
July 14, 1955[1]

DEPARTMENT OF DEFENSE INSTRUCTION

Subject: Utilization of cobalt, nickel, chromium, columbium, molybdenum, and tungsten in military gas turbine engines (DD–AE (A) 216).

Reference: Department of Defense Directive No. 4000.4. Subject: Department of Defense critical materials conservation policy, dated May 17, 1955.

I. PURPOSE

The purpose of this instruction is to implement reference with respect to military aircraft gas turbine engines.

II. CANCELLATION

This instruction supersedes all previous Department of Defense instructions and memoranda concerning the use of subject materials in military aircraft gas turbine engines.

III. DEFINITIONS

For the purposes of this instruction the following definitions are applicable:

A. *Designated materials.*—These consist of cobalt, nickel, chromium, columbium, molybdenum, and tungsten. Chromium includes both electrolytic chromium metal and also the chromium content of ferrochrome. Columbium includes combined columbium-tantalum content, with the contained tantalum considered as contained columbium.

B. *Gas turbine engine.*—This term includes turbojet engines, turboprop engines, and any other aircraft gas turbine engines developed for military applications or under military sponsorship. For purposes of section IV–D–1, afterburners will be considered as an integral part of engines on which they are employed.

C. *Thrust.*—Energy output by turbojet engines will be measured in terms of maximum sea-level static thrust excluding augmentation by coolant injection.

D. *Gross weight.*—In computing the gross weight of each designated material required per engine, the following considerations will apply: gross weight is the actual weight in pounds of the critical material contained in the mill products (sheets, bars, forging stock, castings, etc.) required to build one engine or a component thereof. In the case of forgings, use the weight of the bar or billet required to make the forging. In the case of castings, use the weight of the rough casting after removal of gates, sprues, or risers.

[1] Revised April 30, 1956.

E. *Net weight.*—The net weight of each designated material required per engine is the actual or fly-away weight of the material in a single engine, with no allowance for spare parts.

F. *Gross-to-net ratio.*—This is the per-engine gross weight of each single designated material divided by the per-engine net weight of that material. For each material in each engine, a separate gross-to-net figure will be indicated.

G. *Comparable gross-to-net ratio.*—This figure will be computed for each designated material on the basis of each individual manufacturer's current practice. If the manufacturer produces more than one type of engine, the figure will be computed for his largest volume comparable production item. It will consist of the gross weight per engine of each designated material divided by the net weight per engine of each material. These ratios will be used to convert actual net weights of designated materials in developmental engines into probable gross weights required in these engines.

IV. POLICY

A. As aircraft gas turbine engines under mobilization conditions are certain to be of major importance to military operations and will require high percentages of the designated materials, optimum efficiency must be attained in the use of these materials in the manufacture of these engines.

B. In the achievement of materials conservation objectives it is not envisioned that any action be taken which will result in the impairment or reduction in the performance of any engine.

C. In the design of all gas turbine engines, the policies stated in paragraphs A, B, C, and E of section VII, Department of Defense Directive 4000.4, are relevant. These are:

"Establish programs to reduce or eliminate mobilization uses of critical materials.

"Give preference, in selecting among critical materials for military equipment, to alternate critical materials of less scarcity to the maximum extent practicable.

"Give first consideration, in designs and specifications for military equipment, to the necessity for mobilization readiness.

"Establish appropriate safeguards to prevent needless applications of critical materials from becoming established in newly designed equipment."

D. It is therefore the policy of the Department of Defense that the Secretary of each military department concerned shall assume responsibility for assuring that maximum effort is directed toward attaining optimum efficiency in the use of the designated materials in aircraft gas turbine engines. The military departments shall direct their efforts to attain the following objectives[2]:

1. That, except where performance would be prejudiced, each turbojet engine shall consume for its construction, on a gross weight basis, not more than 22 pounds of cobalt, 88 pounds of nickel, 166 pounds of chromium, 0.70 pounds of columbium, 6.2 pounds of molybdenum, and 5.5 pounds of tungsten, for each 1,000 pounds of sea level static thrust delivered by the engine;[1]

2. Specific target limits applicable to turboprop engines will be established at as early a date as is feasible. Pending establishment of turboprop target limits it is essential that the policies stated in paragraph IV–C above be energetically applied;

3. That limits for special engines or engines for special applications may be established as required;

4. That at the earliest practicable point in its development, each new engine is examined to determine the gross quantities of each of the designated materials required per 1,000 pounds of thrust or 1,000 equivalent shaft horsepower for its manufacture, and that specific action is taken to assure that in the further development of such new engines, it will be brought into conformity with the policy set forth above.

V. PROCEDURES

A. Each military department shall report annually to the Assistant Secretary of Defense (Applications Engineering) the following:

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[1] Revised April 30, 1956.

[2] These target figures were supplied by the Office of the Assistant Secretary of Defense (Supply and Logistics) pursuant to the last two paragraphs of DOD Instruction No. 5129.10 dated September 29, 1954.

1. For each production aircraft gas turbine engine model the using service will report:

(*a*) Current gross requirement per 1,000 pounds of thrust or 1,000 equivalent shaft horsepower for each designated material.

(*b*) Gross-to-net ratio.

(*c*) Thrust or equivalent shaft horsepower.

2. For each development engine model the sponsoring service will report:

(*a*) The current net requirement per 1,000 pounds of thrust or 1,000 equivalent shaft horsepower for each designated material.

(*b*) Comparable gross-to-net ratio.

(*c*) Thrust or equivalent shaft horsepower.

B. These reports to be submitted as of the last day of September. (This will permit proper review by the Assistant Secretary of Defense (Applications Engineering) to revise these limits at the beginning of each year.)

C. Report control symbol DD–AE(A)216 has been assigned to this request.

VI. ACTION REQUIRED

A. The Assistant Secretary of Defense (Applications Engineering) shall review progress in the implementation of this directive and maintain the quantitative limits prescribed herein on an up-to-date basis in conformity with changing circumstances of availabilities and requirements in the designated materials.

B. Each military department concerned shall:

1. Initiate a program for the achievement of the maximum designated material requirements reduction possible for each model engine.

2. Submit the reports required by this instruction.

3. Coordinate its efforts to the extent practicable with those of each other military department in order to establish uniform implementation procedures.

FRANK D. NEWBURY,
Assistant Secretary of Defense
(Applications Engineering).

Mr. REDWINE. The point I am getting at, Mr. Secretary, is why was there this long-time lag of increasing the target figure for tungsten when our domestic production for several years had been in excess of our consumption and the tungsten stockpiling program was ended? As a matter of fact, it ended just 15 days after your directive of April 30.

Secretary QUARLES. Right.

Mr. REDWINE. The stockpile was full. We have all of our tungsten mines closing down. Why at that time?

Secretary QUARLES. First, to be sure we understand the matter, Mr. Redwine, I think it is a fact that you are referring to our directive dealing with the use of tungsten in our turbojet engine manufacture. This was not a broad directive, I believe, but was limited.

Mr. REDWINE. I would like to bring out at this point that the new directive applied only to the jet engines, did it not.

Secretary QUARLES. Yes. I think that is very significant because there was, I believe, no general directive which had the effect that this particular one had in respect to jet engines.

You asked why, in the face of relative plenty of tungsten, we were that slow in changing the target numbers in respect to its use. I would like to explain that this way: Throughout this period, as I have tried to make clear, we did not discourage the greater use of tungsten at any time.

We merely said that according to our best judgment, if we were confronted by mobilization conditions, tungsten would be available in quantities that would justify the level of use that was specified as the target number.

I believe that level of use is 5½ pounds per 1,000 pounds of thrust in our present directive. Throughout that period, the designs that were proposed to us by our design contractors did not find it necessary or even useful to avail themselves of even this amount of tungsten in the design.

So I would merely say that this delay to the extent that it was delayed in issuing a new number, reflected the absence of any need in respect to jet engines to change this situation. I think it had no material effect on the consumption of tungsten in jet engines during the period of this delay.

Mr. REDWINE. Mr. Secretary, in view of your statement, and the previous testimony by Mr. Forry, and you referred to the same fact, that the manufacturers are using only about 50 percent of the target figure as it is, why is there any reason for a target number at all?

Why not just turn them loose and let them use as much as they want to?

Secretary QUARLES. I think only for this reason: Each time we have to come back to the basic purpose of a target number. It is to define to them what we believe the conditions would be in mobilization production. If, in spite of a target number of 5½ pounds per 1,000 pounds of thrust, some manufacturers of a jet engine would come in with a design that, let us say, used 25 pounds of tungsten per 1,000 pounds of thrust, this would not at all prove that the design was bad.

It would merely require us to reexamine the whole situation and make sure that by approving that design we were not getting ourselves in a box where we could not manufacture that design if we were required to go into mobilization production.

It has been made perfectly clear to all of the design engineers, and I am sure you will find they all understand it, that there is nothing to inhibit their making such studies and making such proposals, but if they get beyond this 5½ pound limit, we would like to have and must in fact have the opportunity to reexamine the situation to make sure we are not getting ourselves in a mobilization bind.

Mr. REDWINE. Mr. Secretary, it is generally recognized that in this high-temperature age, tungsten is an absolute necessity; is it not?

Secretary QUARLES. Oh, it is, indeed; yes. The very fact that we rate it as such a critical material and give it a target number is, in itself, evidence of its necessity,

Mr. REDWINE. It has properties that no other metal has?

Secretary QUARLES. Yes, it has, and in addition to the properties that it has that no other metal has, it has valuable alloying properties that other metals have in varying degrees and may be traded against.

Mr. REDWINE. A great deal of work has been done in the alloying field of tungsten, has it?

Secretary QUARLES. I would say, sir, that a great deal of work has been done in the alloying field using tungsten.

Mr. REDWINE. Are these alloys being accepted and used?

Secretary QUARLES. Perhaps you mean in respect to jet engines again at this point.

Mr. REDWINE. I am referring to aircraft; yes, sir.

Secretary QUARLES. Just speaking again about jet engines, the answer is yes, that in respect to those parts in which the peculiar properties of a tungsten alloy would have a value, work is going for-

ward and designs are being proposed and tungsten is being used in some of those parts in relatively high percentages.

Mr. REDWINE. Mr. Secretary, has the committee been correctly informed that through the use of adequate amounts of tungsten, you can increase by 500 percent the life of certain parts of an aircraft?

Secretary QUARLES. I would have to know more about the background of that statement than I know. I would have to know what the comparison is with.

Mr. REDWINE. Let's say turbine blades.

Secretary QUARLES. Right. I mean simply to say that it is true that turbine blades with an appropriate percent of tungsten, perhaps as much as 5 percent of tungsten, 3 to 5 percent of tungsten, would be perhaps 5 times as longlived under certain temperature conditions as a blade without tungsten.

I think that is probably true, although I can't verify it as a specific statement. Not only is that true, but it is also true that the designers of turbojet engines are in fact incorporating tungsten alloys of that kind in blades which they propose to use and it is uses of that kind which bring the tungsten use in turbojet engines up to the present level of 2 or 3 pounds of tungsten per 1,000 pounds of engine thrust.

Mr. REDWINE. As a matter of fact, it is being proposed that ever-increasing amounts of tungsten be used in that particular product, is it not, Mr. Secretary?

Secretary QUARLES. I think it is fair to say that there has been a trend toward increased use of tungsten in the blades of turbojet engines.

Mr. REDWIN. Mr. Secretary, with that ever-growing trend for the use of tungsten, would it not be the part of wisdom for this country to keep its tungsten mines operating?

Secretary QUARLES. Speaking as a generality, I would say yes, but you get beyond my depth there.

Mr. REDWINE. Your personal opinion.

Secretary QUARLES. My personal opinion is that we would be well advised to find ways and means to keep our domestic tungsten industry healthy.

Mr. REDWINE. In other words, it is safe to assume that we are probably going to use ever-increasing quantities of tungsten in our military activities?

Secretary QUARLES. Yes. "Ever-increasing" has a kind of blue sky quality to it, and I don't know just what that might imply, but nevertheless I agree with you.

Mr. REDWINE. I meant in the foreseeable future.

Secretary QUARLES. Yes, all right. Fair enough.

Mr. REDWINE. Perhaps some of the Senators have questions.

The CHAIRMAN. Do you have any questions?

Senator BIBLE. No questions occur to me right now, Mr. Chairman.

The CHAIRMAN. Senator Malone.

Senator MALONE. Mr. Secretary, I am glad to see you again.

Secretary QUARLES. I am glad to see you, sir.

Senator MALONE. I think you probably have answered any questions that I might have from your standpoint. As I gathered from your testimony, it was that you think the lid should be taken off of

any limitations there are at present for the use of tungsten in the design of jet engines or any other material where this metal would contribute to longer life or more efficiency, and that there should be no limitation now.

Secretary QUARLES. Sir, if I might just be sure we are understanding each other, you said that I felt the lid should be taken off—I haven't precisely said that because I don't agree that a lid is on. I do agree that there is a target number applied to tungsten which would guide designers toward their designs in the interest of not exceeding mobilization supplies of tungsten, but in a practical sense at the present time we do not limit the use of tungsten by any such lid or ceiling, and I agree with you that we should not do so.

Senator MALONE. I had understood that you had. Before you came into the picture, during World War II and during the Korean war, the use of tungsten was limited. As a matter of fact, I know that it was because I was consultant to the Secretary of War during that time and to the Senate Military Affairs Committee, which is now the Armed Services Committee. Of course they had a reason for it. The reason was that there was a limited supply of tungsten. The reason for the limited supply then was the policy of the previous administration simply to hold down the production of tungsten, because we had our free trade ideas. We presume that anyone who is for that has a reason for it. But you can't compete with the $2 labor in other countries in the production of tungsten or anything else in this country. I think we all agree on that. So if we agree that we are going to have free trade, which we have virtually, then our tungsten shuts down. That is history. We were not producing any tungsten to amount to anything when World War II came along. We were not producing any mercury to amount to anything. We weren't producing several of these materials, such as manganese.

Confining it to tungsten, at the moment tungsten is running out of our ears. I don't understand what you mean by the mobilization supply. Would you explain that for the record?

Secretary QUARLES. I mean that we would like to have our jet engines and, in fact, our other equipment so designed that were we forced into an all-out mobilization situation and a great stepup in the production of these equipments, we would not have designs of them in being that would use more tungsten than would be available under those conditions.

Senator MALONE. There never has been a shortage of tungsten except through the principles adopted by the Federal Government to prevent its production. We have all the tungsten in the United States that we can use in the foreseeable future if we make it possible. There are only two ways you can do it. I think everyone who studies it agrees with this. First, you can have your free trade policy but set up a price per unit on each of these materials, including tungsten, which approximately makes up the difference between the wage standard of living here and the taxes and the cost of doing business in this country, and that in the chief competing country, which we did in 1953 under the Malone-Aspinall Act. To the best of our ability we allowed for that difference. That was $63 a unit as against what is now about $41 to $43 a unit, the world price. As a result of fixing that difference, we are producing now

just twice as much annually as the annual consumption. I have the average figures right here. I think it would be well, although this is not in your field, to have those figures brought to your attention so you could see that whenever there is an anticipated price per unit for one of these minerals that makes up the difference between the cost of doing business in this country and in the competitive nation, you do get plenty of tungsten.

In 1946 we were producing—I suppose this is in units—is this in units?

Mr. GEORGE B. HOLDERER (staff engineer). Pounds of metal.

Senator MALONE. Pounds of metal. The 1946 to 1950 average production was 3,718,000 pounds of metal. We were consuming about twice that, 6,936,000 pounds. That is right in the middle of this great international one economic world program. In 1951 it stepped up on account of the war. In 1953 we passed the act. It went into effect that year. We produced 9,259,000 pounds, and we used 7,734,000. In 1954 we produced 13,136,000 pounds, and we consumed 4,037,000. In 1955—we are getting close now—under the Malone-Aspinall Act, under the guaranty of price which made up approximately that difference, we produced 15,669,000, and we consumed 8,961,000 pounds.

Now I will ask Mr. Holderer what we have done up to date this year as far as we know.

Mr. HOLDERER. Our production in the first quarter in 1956 will be somewhat greater than in the first quarter in 1955.

Senator MALONE. We can see this program coming to a close, and therefore no one is looking for tungsten. What they are looking toward is getting out whole if we don't extend the act. If we extend the act far enough, if we could extend it 10 years or allow it to go back to the Tariff Commission, the agent of Congress, to fix that difference flexibly, there is no question in my mind but that we would produce more tungsten than we will ever need. If we do go back—and I think we will finally when we have studied it enough—to the Constitution, which calls it a duty, in article I, section 8, to a flexible duty which would make up that difference, which would be a policy by Congress, then the tungsten would not come in when it was produced here because the difference in the wages, and so on, would take the profit out of the low wages at the water's edge. So the domestic producers would be competing only for the American market, and the American market would be whatever we consumed, whatever you use in your national defense plus whatever is used in the ordinary making of steel for civilian purposes.

My point to you in making these figures available to you is that you have no worry whatever in taking the lid off and having a mobilization amount. Only a few of us preached this for the 24 years that we have been on this mental aberration program, but we don't blame you or anyone who is at the head of the department when his experts tell him he has to stay within a certain safe amount. We have George Holderer, an engineer, here, who has been in the business for many years, and I myself was for a number of years. We know that molybdenum and other metals can be substituted, but molybdenum is scarcer than tungsten. So you are using a scarcer metal, really, than you are avoiding.

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I would like you to study this. We don't want just to tell you something here. We want to put the information in front of you and then ask your experts about it. You need have no fear of having a mobilization problem by virtue of the fact that you take the lid off and put all the tungsten in jet engines and all your other material where it will lengthen the life of the material or make it better or faster or stronger.

Do you understand my point?

Secretary QUARLES. Yes, I do indeed, Senator Malone, and I appreciate very much the information you have given me. I realize in answering your question to the effect that there is no lid on the use of tungsten I wasn't explicit as to time. I realize that during World War II and, in fact, during also the buildup of production in the Korean war there was a scarcity and there was a lid. But in saying there is no lid I was speaking of the present situation, and I wanted to make it clear that presently this target number applies, in the first place, only to jet engine production, where so far designers have only proposed to use on the average half of the target number.

Senator MALONE. What do you mean by target number?

Secretary QUARLES. I mean that 5½ pounds of tungsten per 1,000 pounds thrust of a jet engine, which we say to designers is the target number in the use of tungsten, a number which, if not exceeded, will not get you into trouble under mobilization conditions in the use of tungsten.

Senator MALONE. You understand now that you can't possibly get into trouble?

Secretary QUARLES. I do understand, yes, sir, but——

Senator MALONE. If you do understand you can't possibly get in trouble, then you can turn them loose on the target. You can eliminate the target.

Secretary QUARLES. I might just say that I in the Air Force cannot eliminate the target, but I can do the practical equivalent of eliminating the target. If anybody shows me a useful way to apply more tungsten than the 5½ pounds per 1,000 pounds thrust, I have, I am sure, latitude to go back and get this number changed.

Senator MALONE. In other words, I want you to be convinced. That is the reason we want to make everything we have available to you. I refer you to Senate Report No. 1627, a 1954 report by this committee, printed by the Senate. I think not only in this but in other documents you will find some very useful information.

Secretary QUARLES. I know that report.

Senator MALONE. We don't go into detail here, but many of the witnesses that we had, whose names are contained in this document, work for the Government, in the Bureau of Mines, and then there are many other private engineers available to you. As a matter of fact, anyone is available to you. We want to put everything in front of you. We don't want to influence your opinion without the evidence. We want the evidence in front of you so you can take the wraps off and be perfectly sure that whatever you build, whatever design you have, you will have plenty of tungsten available to you at all times, even in wartime. In that way we think, as you will find here in this report—and you have the best advisers in the world, anyway—that you can keep domestic mining open, whereas if you got it from Burma

or China or Mexico or other places you might have a little more trouble, although I think you could maintain the supply from Mexico.

We want to get your decision to take the wraps off from this design, and we do have evidence here that the wraps are on and have been on ever since World War II.

You can get the tungsten from Mexico or other points in the Western Hemisphere, and you don't have to mine it in the United States because you probably can get it elsewhere cheaper because of the cheap labor from $2 to $2.50 a day, but we have an economic situation in this country which this committee is also interested in, and that is these thousands of communities which have an economic structure. There are thousands and thousands of them in the United States. Some raise corn. Some make machine tools. Some mine tungsten and manganese and other things. Each one of them is dependent over a long number of years on the things you can do in that community. By pulling them out one brick at a time you finally weaken your economic structure and not only destroy these little communities which are very important to the individual States, but which go to make up the whole structure, which you can finally wreck by pulling out one brick at a time. One too many sometimes, and it is all gone.

So it is a twofold thing as far as I am concerned, speaking as one member of the committee. First and foremost, of course, you have to be sure of your national defense but, second, you have an economic structure in this country which is higher and stronger and better than anything else in the world, and I think you would be the last one in the world to want to weaken it.

Secretary QUARLES. I certainly would be.

Senator MALONE. We need your assurance, if you are convinced that tungsten can be made available to you, that you will take the wraps off, because what is happening now and has been happening under this bill that I have named to you, since 1953, at the $63 price which we estimated above $43 would be the difference between wages and the cost of doing business, they sell that to the Government and then the consumers buy at the world price and bring it in without a tariff or anything to even the labor price. So it is piling up in this country. The Government owns practically everything that has been mined under this bill. Of course we need some way of evening it up, and I hope maybe next year—at least we will continue to work on it—that we will arrange it in some manner. The tariff of course is the logical and sanest solution to it, but there must be some solution so in the American market the domestic producers and anything coming in have the same labor cost at the water's edge with whatever they call it, some kind of a charge.

I want to call this other thing to your attention, too, and I hope you study it. That is, the difference between the guaranteed price of $63 or $55, whatever we fix in the extension, and the $43 you can't find in a jet engine. You haven't enough decimal points. So it doesn't make any difference to the overall budget whatever. If you would, study that a little and hand it down to your people, and if they have any different opinion we are ready to sit down with them. This country has been flooded with propaganda for 24 years now, first that we have no tungsten, and second that we have to get it at a lower price. They are both phony arguments.

Secretary QUARLES. Senator Malone, I would just like to make one or two comments.

First, viewing this as a strategic materials problem as distinguished from an economic problem, I think it is clear that we are relieved of the strategic shortage of tungsten.

Senator MALONE. It is not a strategic metal any more.

Secretary QUARLES. Of course, I am again speaking as a military man. I am very glad indeed to find that we are relieved of that shortage. It is a tremendously important military metal.

As for the wraps, I would like to assure you, first, that if there are any circumstances in which the use of tungsten has been inhibited by our rules or regulations or actions, I am unaware of it. I am speaking of currently. But whether this is true or not, I can assure you that if any of our contracting designers propose to us a valid use of tungsten in jet engines beyond the target number or in any other design where we don't even have target numbers, we will study their proposals in the light of the information you give us, namely, that tungsten is available if there is a justified use for it.

Senator MALONE. If you are convinced through further study and from what you can get from your own departments—I assure you that you have some of the best experts in the world available to you in the mining department of the Department of the Interior—if you are convinced that what I say today is true, then you are not going to worry about this mobilization—what did you call it?

Secretary QUARLES. Target number.

Senator MALONE. You are not going to worry about that any more.

Secretary QUARLES. That is right. I don't, in fact, worry about it now.

Senator MALONE. You don't need to, because our stockpile is bulging at the seams. We are producing twice as much as we are using currently in the United States. Of course, private people don't stint in making something for the Government unless you insist upon it.

I was not at the hearing a week ago, but Senator Bible and Senator Murray were here and they can correct me if I am wrong. The evidence at that hearing did show that there had been a definite limit placed on the amount of tungsten that could be used in the design of defense material. Is that right?

Senator BIBLE. That is a correct statement, Senator.

Senator MALONE. Who gave that evidence?

Senator BIBLE. That was a directive that was issued by——

Senator MALONE. The name of the witness?

Senator BIBLE. Mr. Forry testified concerning directive No. 4000.16, dated July 14, 1955, which put a limitation of 4.6 pounds of tungsten per 1,000 pounds of thrust.

Senator MALONE. Do you mean, Senator, that as late as 1955 they were still insisting that they were short of tungsten?

Senator BIBLE. That is my understanding of the purport of the directive of July 14, 1955.

Senator MALONE. How can the GSA keep a secret from the national defense organization, if it was running out of our ears then?

Senator BIBLE. I am not attempting to put words in the witness' mouth, because Mr. Forry is here.

Mr. FORRY. I would like to comment at this point, if I may. At the time that the July 1955, document was issued, sir, it was well recognized by the people in the Department of Defense working in this field that there had been a well-publicized shortage of tungsten during the Korean affair. In view of this fact, we felt it would be most desirable to include tungsten in this system to point up the improved situation. We believe that our action just recently on April 30, which was a reflection of the additional stockpiling which had occurred since last year and of further improvement in the situation, and that we would encourage engine designers to use larger quantities if performance warranted it on their own volition by supplying them with this information.

Senator MALONE. Mr. Forry, I have been here 30 or 35 years as an engineer on various projects, but I don't understand that language very well. When you are right in the middle of an overproduction of tungsten, that is, beyond possibly domestic use, you are still trying to point up something to a designer. You must have had available to you the figures which I read, that in 1955 we produced almost exactly twice the tungsten that was used in the United States and practically all of it went into the stockpile because the consumers, that is, the private consumers, could get it about $22 per unit cheaper. There was no evener of the wages at all, so naturally they did that. This is all going into the stockpile.

I have been studying stockpiles for a long time. Back in the late thirties when Woodring was Secretary of War and Johnson was Assistant Secretary, Johnson said I was the first man who ever put before them the idea of a stockpile of strategic minerals. Our theory all this time has been a stockpile plus a going concern production in the Western Hemisphere. You can defend and keep open the mines in the Western Hemisphere during a war. We must confine this to the United States because that is what we are talking about. A going concern industry plus the stockpile would equal what you would need during any conceivable war or emergency.

Now we are beyond that point. The stockpile is bursting at the seams. We are producing so much tungsten that the consumers in civil work are going to buy foreign production anyway. Our problem now is overproduction. The success of the program works against it. That is right, isn't it, Mr. Chairman?

So our problem now is to get you to use it. It isn't this involved language which scares everybody, thinking that you are going to crack down on them if they put their engineers to work and use what they ought to use. I am not a designer of jet engines and don't understand it very well, but I understand it well enough to know that you are going to get longer life and a better product if you let them use the amount of these materials that they want to use. So, why any order at all? That is what I want to ask you.

Mr. FORRY. Sir, my opening remark was aimed in that direction.

Senator MALONE. But it isn't in that direction at all. You should have been advised that you had this material. So, why write a book about it?

Mr. FORRY. There is one point that I would like to emphasize here. That is that these numbers are aimed at our mobilization condition rather than our current condition.

Senator MALONE. What do you call a mobilization condition? Just tell me.

Mr. FORRY. All right, sir. I will attempt to. This recognizes the situation that follows the commencement of hostilities in which the plans for the increased production of military equipments are being put into effect as rapidly as possible. It represents a recognition of the accelerated production which takes place during that period of time, sir.

Senator MALONE. What of it? Tell me the rest of it.

Mr. FORRY. The rest of it is that the supply and demand figures—for the supply figures we depend on the Office of Defense Mobilization, and the demand figures are requirements that the military departments have supplied to the Secretary of Defense—come out to these sorts of numbers as the usage under the supply-demand situation that would occur with mobilization starting in the immediate future.

Senator MALONE. I still can't understand it. What position are we in now? Let's forget 1955.

Mr. FORRY. The position that we are in right now is that if a war were commenced on July 1 we would have available to us tungsten to over twice the amount that we would need for mobilization.

Senator MALONE. Then, why haven't you rescinded that order that you put out in 1955?

Mr. FORRY. We thought we were encouraging people to use more by pointing to the improved situation.

Senator MALONE. Look, you don't do that by writing a book about it. Just put out an order, a simple thing that even I can understand, and say, "We now have plenty of tungsten. The wraps are off." Could you do that for us? Why don't you now just send out one paragraph that "We are now advised that we have all the tungsten we need and more, too, in the stockpile and current production. Go just as far as you like." Why don't you do that?

Mr. FORRY. Sir, if we felt that we had had any restrictive effect on the use of tungsten and that there could be generated an important improvement from increased use, I am sure it would be a matter that we would want to consider very carefully.

Senator MALONE. Yes; I suspect you would, maybe in about 2 years. You would consider it for 6 months.

Mr. FORRY. I would hope not so long.

Senator MALONE. What effect do you think this order of yours had which went out last year. Did it not caution them not to go too far?

Mr. FORRY. Obviously the whole tone of the document is in the direction of recognizing a factual situation that would exist under mobilization, and in that sense it has that general effect.

The CHAIRMAN. I am sure that the Secretary will give consideration to the facts which have been developed at the hearing this morning and that he will give us his advice subsequently on this subject so we may have a complete record. I am sure that there are vast deposits of tungsten in this country which have not been touched at all, which are awaiting utilization. The Government has inspected some deposits and, while some of them may be low grade, there are possibilities in present processes to utilize these great deposits which we have. I am sure that the Secretary will give us great help in trying to work out this problem which is important to the industry.

Secretary QUARLES. I will, Mr. Chairman, and I would like to go just a little further than that in response to Senator Malone's recent points by saying that it seems to me the situation may well justify a reexamination in the Government as a whole of our tungsten position. I would like to relieve Mr. Forry a bit of the responsibility here, because he is acting in accordance with the policy of the executive branch of the Government as a whole in this matter.

It would certainly seem appropriate to me—and I shall undertake, together with Mr. Forry, to bring to the attention of the Office of Defense Mobilization this tungsten situation and reexamine it to see if there is still occasion for any target number whatsoever in respect to this design. I shall be very glad to do that—not, however, holding out the hope that by doing so we would immediately increase the use of tungsten in these particular jet engines, but at least it would take any possible inhibition out of it.

Senator MALONE. It takes time for new designs.

Secretary QUARLES. That is right.

The CHAIRMAN. Thank you, Mr. Secretary.

Senator BIBLE. Mr. Chairman, it will take me only about 2 minutes to direct this one inquiry to the Secretary.

This is something that I pointed out to Mr. Forry when he was here last week in your absence, sir. It just pinpoints what Senator Malone was saying.

This is taken from the American Aviation Daily of August 2, 1955. You certainly are familiar with that publication and its reliability.

Secretary QUARLES. Yes, I am.

Senator BIBLE. It is entitled "Use of Scarce Metals in Gas Turbine Engines To Be Limited."

The Defense Department, in a move to preserve the supply of critical materials, has placed a limitation on the amounts of cobalt, nickel, columbium, molybdenum, and tungsten which may be used in gas turbine engines.

Then it says that Directive 4000.16 states that each turbojet engine shall use 4.6 pounds per 1,000 pounds of thrust. Then it adds this, which I think is what Senator Malone was saying:

The directive noted that it is not yet feasible to set similar limits on the use of scarce materials for turboprop engines but declared it "essential that general policies urging as little use of these metals as possible be energetically applied." Signed by Frank D. Newbury, ASD for Application Engineering, the directive declared that new engine should be

and so forth.

I ask that this be placed in the record at this point in my question.

(The document referred to follows:)

[American Aviation Daily, August 2, 1955]

USE OF SCARCE METALS IN GAS TURBINE ENGINES TO BE LIMITED

The Defense Department, in a move to preserve the supply of critical materials, has placed a limitation on the amounts of cobalt, nickel, columbium, molybdenum, and tungsten which may be used in gas turbine engines.

Directive 4000.16 states that except where performance would be prejudiced, "each turbojet engine shall consume for its construction, on a gross weight basis, not more than 13 pounds of cobalt, 63 pounds of nickel, 110 pounds of chromium, 35 pounds of columbium, 5.5 pounds of molybdenum, and 4.6 pounds of tungsten, for each 1,000 pounds of sea level static thrust delivered by the engine."

The directive noted that it is not yet feasible to set similar limits on the use of scarce materials for turboprop engines but declared it "essential" that general policies urging as litle use of these metals as possible "be energetically applied."

Signed by Frank D. Newbury; ASD for applications engineering, the directive declared that each new engine should be examined at the earliest practicable point in its development to determine the gross quantities of each of the scarce metals needed and that specific action be taken to make certain that in further development of the engine, the limitation be enforced.

Newbury told the military services that they will have to submit to him reports on production and development engines each September 30. These reports will indicate the requirements of scarce materials for each 1,000 pounds of thrust or 1,000 equivalent shaft horsepower.

Senator BIBLE. The only purpose of my question, Mr. Secretary, is to indicate to you that this directive certainly leads aircraft designers to believe that there is a limit to the use of tungsten that they can make. Directive 4000.16, frankly, is a hard document to read as to exactly what it does mean. Apparently we do now have an adequate supply of tungsten, with production doubling consumption last year, 1955. So I think I am attempting to say what Senator Malone has said: Is there any realistic need at all for any type of target number, however you might possibly construe it?

Secretary QUARLES. I think my only comment beyond what has already been said, Senator Bible, would be to note, as I believe is the case, that the directive referred to here in the Aviation Daily of last August has now been superseded, and I believe that it is quite clear from the wording of the present directive that these target numbers should not be interpreted as ceilings or limitations in the sense that this quotation implies.

Senator BIBLE. At least I think that is a step in the right direction.

Secretary QUARLES. A step in the right direction; yes, sir.

The CHAIRMAN. Thank you again, Mr. Secretary.

Secretary QUARLES. Mr. Chairman and gentlemen, thank you very much. I appreciate the opportunity to appear.

The CHAIRMAN. We will be in touch with you and will look forward to assistance from you in helping to work out this problem.

Do you wish to ask any questions, Senator Langer?

Senator LANGER. No, thank you.

Senator BIBLE. I will ask Mr. Forry if he has supplied the information that we requested last week.

Mr. REDWINE. Yes, we have that.

Senator BIBLE. Thank you very much. That is all, Mr. Chairman.

The CHAIRMAN. I am sure we are all indebted to Senator Malone for the great study he has given to this subject and for the facts he has brought out this morning, and also to Senator Bible for the very careful study he has given to this matter and for the help he has given to the committee in determining the facts.

Senator BIBLE. Thank you, Mr. Chairman.

Senator MALONE. I think the chairman can take a lot of the credit for these reports which are coming out of the committee.

(The following was later supplied for the record:)

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE,
APPLICATIONS ENGINEERING,
Washington 25, D. C., June 12, 1956.

Hon. JAMES E. MURRAY,
United States Senate.

DEAR SENATOR MURRAY: This is with further reference to the Department of Defense policy as to the use of tungsten in jet engines, which was the subject of hearings before your committee May 16 and 24.

In view of the evident misreading of the intent of Department of Defense Instruction 4000.16, we have concluded that, rather than continuing to use this document as guidance to the industry for both shortage and surplus, it should hereafter be reserved for guidance only in materials that are either in a deficiency position or offer a real possibility of coming into a deficiency position.

For this purpose we have formulated a policy defining the terms under which a material is to be removed from this instruction, and the terms under which a material is to be added to it. This proposal has been transmitted to the military departments and staff agencies of the Department of Defense for their concurrence. The indications at this time are that this action will have the effect of removing columbium, molybdenum, and tungsten from our target number system.

This proposal has been discussed with Secretary Quarles, who considers it a satisfactory resolution of the problem.

Sincerely yours,

JOHN E. FORBY,
Assistant Director,
Office of Aircraft and Marine Craft.

(The following was later supplied to answer the question from Mr. Redwine:)

QUESTION

What directive did the Department of Defense Instruction of July 14, 1955, replace?

ANSWER

Although no former Department of Defense directive or instruction establishing specific targets was in effect prior to this time, the military departments and their contractors had been working to several sets of targets, and these had been made known to the industry for some 4 years previously.

The original targets appear to have been issued informally by the Department of the Air Force in 1950, and sought to hold the usage of tungsten to 1 pound per 1,000 pounds of thrust. The following year, the Munitions Board joined with the Research and Development Board in consulting with the engine industry, to urge them to bring their usage of materials down closer to limits then feasible for mobilization. At this time a target of 1.6 pounds of tungsten per 1,000 pound of thrust was announced. As it had never been formerly rescinded, this target was still in effect up to 1955.

When the matter came up for study at the close of 1954, the objectives were, in general, as follows:

To achieve optimum efficient use of these materials;

To avoid a repetition of the rather serious deficiency situation that threatened in 1949–51;

To trade off materials in improved supply in place of those still remaining critical.

The question of whether or not to include tungsten was debated in the course of developing the instruction of 1955. The staff took cognizance of the improved availability of tungsten. It was concluded that as the target number imposed earlier had been quite restrictive, the best way to indicate the improved supply situation—and its order of magnitude—would be to retain tungsten on the list. The target number assigned to it would indicate to the industry in black and white the extent to which enlarged use of tungsten was readily feasible. It was felt that if tungsten was omitted from the list the industry would continue to be influenced by the earlier and restrictive targets of 1 to 1.6 pounds per 1,000 pounds of thrust. The earlier targets were definitely lower than the average use of tungsten per 1,000 pounds of thrust, whereas the current targets are between 2 and 3 times the current use of tungsten.

To make sure that this was understood by the engine industry and its suppliers (along with other aspects and purposes of the new instruction), the Department of Defense convened a meeting in November 1955, somewhat along the lines of the earlier meeting in 1951. At this second meeting, in the principal address, the statement was made that:

"A modest surplus of tungsten is at hand and a larger surplus is in prospect; can industry usefully employ this additional quantity of tungsten in high temperature alloys?"

It cannot be overemphasized that all of these targets and policies are concerned with mobilization readiness. The Department of Defense has the responsibility for maintaining at all times the ability to procure the quantities of equipment needed for mobilization. The most efficient and least expensive way to do this is to do it in an orderly fashion. It is only a matter of good management to keep industry informed on the availability of materials. Whatever action the Congress may take to improve the quantity of tungsten available to the engine industry under mobilization conditions ought to be measured in terms the engine industry can apply to its own actions. We believe it is good management to keep this vitally important industry informed of this availability in as up-to-date terms as possible. However, once a material has reached a point of great surplus—to meet mobilization needs—we agree that this information can be generalized and that target numbers become more or less irrelevant. This is now the case with tungsten.

The CHAIRMAN. This will conclude the hearing for this morning. We will recess until 2:30 this afternoon.

(Whereupon, at 11:00 a. m., the subcommittee recessed, to reconvene at 2:30 p. m. the same day.)

AFTERNOON SESSION

Senator MURRAY (presiding). Gentlemen, the hearing will come to order.

The first witness this afternoon is a distinguished visitor from Montana, an old friend of mine. We were hard rock miners together in Butte many years ago, and I have a very high regard for him. We worked in the mines in Montana and I formed a friendship with him then, which has endured all these years. I am very glad to have him here today. He is well informed on these problems that come before our committee.

And I will ask the gentleman, Mr. Maloney, to take the witness stand.

You may state your full name and your present position.

STATEMENT OF W. G. MALONEY, SECRETARY-MANAGER, MINING ASSOCIATION OF MONTANA, BUTTE, MONT.

Mr. MALONEY. My name is W. G. Maloney, and I represent the Mining Association of Montana.

Senator MURRAY. How long have you lived in Montana?

Mr. MALONEY. A little over 60 years, Senator.

Senator MURRAY. I see. You are getting along in my class.

Do you have a statement that you would like to make this afternoon with reference to the mineral situation?

Mr. MALONEY. I have, Senator.

I will briefly read this statement and then offer it for the record, Senator, with your permission.

MAY 21, 1956.

Senator JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
Senate Office Building, Washington, D. C.

DEAR SENATOR MURRAY: The Mining Association of Montana is in hearty accord and takes an affirmative stand in submitting all the provisions and suggestions offered the committee to provide for an extension of a Government-supported domestic manganese purchase program.

The specific provisions are as incorporated in the telegram to you by the majority of the manganese producers of Montana. The Mining Association of Montana believes it necessary to incorporate their suggestions in any legislation so that a firm industry will result from the producers efforts as well as to provide for an emergency facility in times of possible national emergency.

Very truly yours,

MINING ASSOCIATION OF MONTANA,
W. G. MALONEY, *Secretary-Manager.*

I offer this for the record.

Senator MURRAY. It is a part of the record.

Senator MURRAY. That represents the sentiment of the miners organization in Montana?

Mr. MALONEY. Yes; it does.

Senator MURRAY. And you are familiar with the manganese development program in our State over the years?

Mr. MALONEY. Yes.

Senator MURRAY. Do you feel that with proper advice and help the manganese industry can develop into a big, substantial program?

Mr. MALONEY. Yes; I do.

Senator MURRAY. Are there any questions that you wish to ask him?

Mr. REDWINE. No, Mr. Chairman.

Senator MURRAY. Thank you very much for your statement, Mr. Maloney. We appreciate it.

Mr. MALONEY. May I thank you for the kind remarks made in my behalf, Senator, and thanks again from the Mining Association for the privilege of appearing before your group.

Mr. REDWINE. The next witness is Dr. Flemming. But may I read something in the record ahead of that, Mr. Chairman?

Senator MURRAY. You may.

Mr. REDWINE. We have, Mr. Chairman, a letter and resolution passed by the national executive committee of the American Legion which they asked to be read at this time. I will read it in the record so everyone will know what they are saying.

THE AMERICAN LEGION,
NATIONAL LEGISLATIVE COMMISSION,
Washington, D. C., May 22, 1956.

Hon. JAMES E. MURRAY,
Chairman, Subcommittee on Minerals, Materials and Fuels,
Senate Committee on Interior and Insular Affairs,
Senate Office Building, Washington, D. C.

DEAR SENATOR MURRAY: Referring to hearings scheduled to be held on May 24 and 25, 1956, by the Subcommittee on Minerals, Metals, and Fuels, I enclose copy of resolution No. 35 adopted at the May 2–4, 1956, meeting of the national executive committee of the American Legion urging that legislation be enacted to provide Federal support in the discovery, development and processing of critical minerals necessary to our national defense.

I would appreciate it very much if you would be good enough to have this letter and the enclosed resolution given consideration by the subcommittee during

the deliberations on this subject and, if consistent, the letter and enclosed resolutions incorporated in the record of the hearings.

Thanking you for your courtesy and consideration, I am

Sincerely yours,

MILES D. KENNEDY, *Director.*

NATIONAL EXECUTIVE COMMITTEE MEETING OF THE AMERICAN LEGION
HELD MAY 2–4, 1956

Resolution No. 35.
Committee: National security commission.
Subject: Reserves of strategic and critical minerals.

Whereas the American Legion by its resolution No. 585 adopted at the 35th national convention at St. Louis, found that reserves of strategic and critical minerals were necessary to national defense; and

Whereas the special Subcommittee on Minerals, Materials, and Fuel Economies of the Committee on Interior and Insular Affairs of the United States Senate of the 83d Congress found that manganese, tungsten, and many other strategic and critical materials are in short supply in the United States and are being imported from India, Brazil, and other far places across the oceans; and

Whereas unlimited submarine attack can cut off our supply of necessary minerals and emasculate our production of planes, tanks, guns, and other weapons; and

Whereas most critical materials are to be found in the United States in low-grade ores capable of upgrading and refinement; and

Whereas the cost of discovery, development, and refinement of such critical materials is too great to be borne by private capital alone; and

Whereas the support of the Federal Government is needed to develop a home supply of manganese, tungsten, zinc, lead, and many other critical materials: Now, therefore, be it

Resolved by the American Legion in its national executive committee meeting of May 2–4, 1956, That a home supply of critical minerals is necessary to adequate national security and that Federal aid should be extended to secure such supply; and be it further

Resolved, That legislation should be enacted providing Federal support in the discovery, development and processing of critical minerals necessary to our national defense; and be it further

Resolved, That the American Legion lend its full assistance in the securing of such legislation.

Mr. Chairman, I offer the letter from the American Legion with the enclosed resolution for the record.

Senator MURRAY. They have been made a part of the record.

Mr. REDWINE. Dr. Flemming, Mr. Chairman.

Senator MURRAY. Dr. Flemming, please take the stand.

Mr. REDWINE. Mr. Chairman, before Dr. Flemming starts, we have with us this afternoon several Congressmen who are interested in this legislation before us who would like permission of the chairman if they see fit to ask questions of Dr. Flemming, too, as his testimony develops.

Senator MURRAY. That privilege will be granted. You have the freedom to ask any questions you desire.

Dr. Flemming.

STATEMENT OF ARTHUR S. FLEMMING, DIRECTOR, OFFICE OF DEFENSE MOBILIZATION; ACCOMPANIED BY CHARLES H. KENDALL, GENERAL COUNSEL; AND THOMAS CURTIS, CHIEF, IRON, STEEL, AND FERROUS ALLOYS SECTION

Dr. FLEMMING. Mr. Chairman and members of the committee, I am very happy to have the opportunity of coming before this com-

mittee to discuss the domestic purchase programs for the materials for which various bills have been introduced.

If it is agreeable with the committee, I shall summarize our defense position on the materials and present suggestions for action before taking up the questions that the committee may wish to ask.

My statement is limited to the seven minerals (asbestos, beryl, chromite, columbium-tantalum, manganese, mica, and tungsten) covered by the Domestic Minerals Program Extension Act of 1953 plus antimony, acid-grade fluorspar, metallurgical fluorspar and mercury. I shall be glad to provide information on other materials if there are questions concerning them.

The pending mineral-purchase bills generally specify the time, amount, and price for which Government guaranties would be offered.

Some of the bills would require appropriations and others would use the borrowing authority under the Defense Production Act.

The General Services Administration has prepared an analysis of the bills and can provide details on the provisions and the estimated costs of the programs.

The Office of Defense Mobilization has taken the position that ample authority exists under the Defense Production Act, the Stock Piling Act, and the Agricultural Trade Development and Assistance Act to procure materials for the national defense.

As you know, the Office of Defense Mobilization has strongly supported a 2-year extension of the Defense Production Act to deal with any defense materials procurement needs that may arise.

We believe that the procurement authority for materials should be kept flexible to permit immediate action to be taken to support a vigorous defense program and particularly to take care of the new types of defense needs.

We believe that measures which are primarily for economic relief should not be handled as a part of the defense program.

For one or more of these reasons, the Office of Defense Mobilization has not supported the bills that would write into legislation specific guaranties for individual materials.

In order to be as specific as possible, let me summarize our further defense needs for individual materials and the solution that we propose in each case.

First, mica, muscovite block, and film.

Muscovite block and film on hand and on order is equal to only about a third of the minimum stockpile objective and about a fifth of the long-term stockpile objective.

The Government-purchase program calls for the purchase of the equivalent of 50 million pounds of hand-cobbed mica at a premium price. Even if this amount is not acquired by June 30, 1957, the program is to be terminated.

Up to the present time the Government has acquired approximately 4,950,000 pounds of block and hand-cobbed mica, of which about 510,000 pounds meet stockpile specifications.

It is clear that in view of the present condition of the stockpile, the Government can extend the purchase program for at least 5 years. No adjustment will be required in the amount to be purchased in view of the fact that only approximately 28 percent of the quantity previously authorized has been put to the Government. We have re-

quested General Services Administration to advise us of the additional financial requirements that will be needed to extend the program for 5 years to June 30, 1962. As soon as this information is available the General Services Administration will be authorized to make this extension.

Next, metallurgical chromite.

More than 100 percent of the minimum stockpile objective and about 70 percent of the long-term objective are on hand or on order.

The Government is purchasing all of the domestic chromite of specification grade that is offered up to 200,000 long tons through June 30, 1957.

Up to the present time the Government has purchased 101,000 long tons. Consequently, there is no question but that the program will continue up to June 30, 1957.

The price being paid for domestic chromite is $115 per ton for lump ore and $110 for concentrates as against a market price of about $43 to $50 per ton for grades of ore on the open market most nearly comparable to these concentrates.

From the standpoint of stockpile objectives, it is clear that this program could be continued for a long period beyond June 30, 1957. The question confronting the Government is whether the program, if continued, would ultimately provide us with a mobilization base that would justify the expenditure of sums of money considerably in excess of the amounts that would be paid if the material were purchased on the world market.

Senator MALONE. Mr. Chairman, I am informed that there is a vote on the Senate floor.

Senator MURRAY. We will suspend the meeting for a few minutes. We are called to the floor for a vote. We will be back in a few minutes.

(Brief recess.)

Senator MURRAY. The hearing will come to order, again.

You may proceed.

Dr. FLEMMING. Thank you, Mr. Chairman.

If you recall, I was discussing the metallurgical chromite, and I was just saying that the ODM does not believe that the program should be discontinued until it has had the opportunity of exploring the matter further. The Interior Department has been requested to explore the matter further and submit an early report on the question of whether a meaningful mobilization base might be supported in the light of domestic reserves of metallurgical chrome and the feasible production from such reserves in time of emergency. The Office of Defense Mobilization feels that if there is a reasonable doubt as to whether or not the program would ultimately provide us with a meaningful mobilization base, the doubt should be resolved in favor of a continuation of the program.

Next, beryl. The stockpile inventory exceeds the minimum objective, and inventories plus orders are equal to about 70 percent of the long-term objective.

The Government purchase program calls for the purchase of 1,500 tons and for termination of the program by June 30, 1957.

Up to the present time the Government has acquired about 900 tons against this goal of 1,500. It is estimated that an additional 400 tons will be purchased by June 30, 1957.

The price being paid by the Government is about 5 percent higher than the commercial price.

In view of the condition of the stockpile, this program at the present rate of acquisition can be extended for at least 5 years under the authority of the Defense Production Act. We have requested General Services Administration to advise us of the additional financial requirements that will be needed to increase the program ceiling from 1,500 to 4,500 tons and to extend the termination date to June 30, 1962. As soon as this information is available, the General Services Administration will be authorized to make this extension.

Metallurgical grade manganese: The quantity of metallurgical manganese in inventory greatly exceeds the minimum stockpile objective and the total inventory plus commitments is equal to almost 90 percent of the long-term objective. These quantities do not include a considerable tonnage of nonstockpile grade manganese already obtained from the domestic purchase program which would require upgrading before use.

The Government-purchase program calls for the acquisition of 6 million long-ton units of recoverable manganese at each of 3 depots. In the case of two of the depots the quota has been reached. In the case of the third depot, it is estimated that the quota will be reached by June 30, 1958.

The purchase program also involves the acceptance of specification grade ore in carload lots from small producers up to 19 million long-ton units. Approximately 6 million units have been purchased. The program is to terminate on June 30, 1958, even if the 19 million units have not been acquired by that time.

The Government has been paying approximately $2.30 per long-ton unit under its program as contrasted with a market price of $1.30 per long-ton unit for specification grade ore.

In view of the fact that there is still room in the long-term stockpile objective, it is clear that the carload lot program can remain open until the quota is reached and that there is also a possibility of some increase in quota. This additional quantity cannot be determined fully until we know just how much specification grade ore we are going to obtain from the low-grade purchase program. The General Services Administration has been requested to report on the amount of specification grade ore that might result from beneficiation of the low-grade ore. They have likewise been requested to report on the status of current research programs and the likelihood of their submitting favorable recommendations on specific processes for the recovery of manganese from low-grade ores.

As soon as the information referred to above has been received from the General Services Administration it will be authorized to take action to extend the termination date for the carload lot program to June 30, 1961, and to accept carload lot shipments of carload ore during that time or up until that time.

Next, fluorspar—metallurgical grade.

Inventories plus orders are substantially below the minimum stockpile objective, which for this material is the same as the long-term objective.

The Government does not have any fixed-price purchase program for metallurgical fluorspar.

The existing stockpile directive instructs the General Services Administration to give preference to domestic metallurgical fluorspar.

The General Services Administration has been authorized to determine by actual negotiations the premium that would have to be paid to accomplish domestic procurement of metallurgical fluorspar. As soon as this information is available the General Services Administration will be authorized to pay an appropriate premium price for domestic procurement.

Antimony: The quantity on hand and on order is about 80 percent of the minimum stockpile objective and the long-term objective is substantially higher than the minimum.

The Government does not have any domestic purchase program at a premium price.

The stockpile procurement directive requires that preference be given to antimony obtained from domestic sources.

If the instruction relative to preference does not result in domestic procurement, the General Services Administration has been instructed to ascertain the price that would have to be paid in order to make meaningful the instruction relative to preference for domestic purchases.

Next is related mercury.

The minimum and long-term stockpile objectives have been reached.

The domestic mercury mining program was undertaken by the administration in July 1954, with the objective of maintaining the necessary domestic component of the mobilization base.

This program provided assurance, for more than 3 years, of a market that will enable industry to expand with confidence. The industry is free to sell at market price at any time and has a general guaranty upon which it can rely to sell as many as 125,000 flasks to the Government at $225 a flask by the end of 1957. So far only a nominal amount of mercury has been offered to the Government for purchase since the market price is substantially about the guaranteed floor price.

Because the domestic purchase program does not expire until the end of 1957, ample time exists to ascertain whether a change in defense needs or the wartime supply outlook would justify an intensification or extension of the program.

Columbite and tantalite: The quantities of both columbite and tantalite on hand and on order substantially exceed the long-term objectives and also the total 5-year mobilization requirements for the 2 materials.

The purchase program, which was inaugurated in 1952, involved a quota of 15 million pounds of contained pentoxides of columbium and tantalum (11 million pounds of contained metal) to be obtained from foreign and domestic sources by December 30, 1958, the termination date of the program.

This quota was reached on December 31, 1955, and the program was terminated at that time.

The Government has entered into one contract for columbite, under which it has agreed to purchase 1,050,000 pounds of contained metal over a period of the next 5 years at a price of $6.25 per pound—a price which is about 2½ times the world market price. It is clear that the amounts which will be obtained under this contract are in excess of any defense needs. However, the contract was entered into at a time when it was not clear whether the amount provided for would be needed in order to reach our stockpile objective.

Our defense position does not justify any additional arrangements for the purchase of columbite and tantalite.

Next, asbestos chrysotile.

The quantity on hand and on order under the stockpile program is almost equal to the long-term objective.

The Government program calls for the purchase of 1,500 short tons of crude No. 1 and crude No. 2.

Up to the present time, the Government has acquired approximately 1,425 tons of asbestos of these grades at a price that is substantially in line with commercially quoted prices.

The Government's experience has been that approximately 10 percent of the asbestos acquired meets stockpile specifications. When the amount acquired under the Government's purchase program has been tested and approximately 150 tons have been transferred to the stockpile, the long-term objective will have been reached.

In view of the fact that the purchase program is about to terminate, and that all defense needs have been met, we believe that this is a situation where Congress should take appropriate action to assist the industry by providing for purchases of specified amounts from nondefense funds until Congress has had time to consider recommendations from the Department of the Interior for a long-term program.

Fluorspar, acid grade: The amount on hand and on order exceeds both the minimum and long-term stockpile objectives.

The Government does not have any purchase program at premium prices for acid grade fluorspar. The domestic industry has been supplying quantities to the Government, however, under regular stockpile contracts.

In view of the fact that deliveries under these contracts are about to end, we believe that this is a situation where Congress should take appropriate action to assist the industry by providing for purchases of specified amounts from nondefense funds until Congress has had time to consider recommendations from the Department of the Interior for a long-term program.

Tungsten: Tungsten on hand exceeds both the minimum and long-term stockpile objectives. The inventory plus orders is larger than the total 5-year wartime requirements.

The Government is purchasing all the domestic tungsten that is offered and is paying a premium price of $63 per short ton unit as against current market price of about $43.

The legal termination date for the tungsten program is July 1, 1958, but the program will probably be completed by June 30, 1956, considering that purchases through March totaled 42,070,000 pounds and the quota under the program is 47,582,000 pounds.

No new foreign contracts have been signed by the Government since January 1953, although large deliveries will continue to be made against foreign contracts entered into prior to that time.

There is clearly no defense justification for a continuation of this program because even without any access to either domestic or foreign sources of supply in the event of war, we would have enough in the stockpile to meet total requirements for approximately a 5-year period.

In view of the fact that the purchase program is about to terminate and that all defense needs have been met, we believe that this also is

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a situation where Congress should take appropriate action to assist the industry by providing for the purchase of specified amounts from nondefense funds until Congress has had time to consider recommendations from the Department of the Interior for a long-term program.

Having discussed the situation on individual materials, I would like to direct your attention to the recommendations of the Cabinet Committee on Minerals Policy which are of special concern to the domestic minerals program.

Up to March 26, 1954, the Government made provision only for minimum stockpile objectives.

On that date, the President, acting on the basis of a preliminary study of the Policy Committee, authorized the Office of Defense Mobilization to establish new long-term mineral stockpile objectives to eliminate completely the risk of dependence on overseas sources.

The procurement program established under this directive, I am sure you will agree, has materially strengthened the domestic mineral industries.

The Cabinet Committee on Minerals Policy also recognized that the development of mineral resources may involve factors beyond the national security. It stated that—

> In addition to security considerations, the Committee believes that an orderly development and wise use of the Nation's resources is an essential element in a strong and sound economy.
>
> A major objective of mineral policy is a full and orderly program for the development and conservation of the country's mineral resources.
>
> The Committee believes that the Government has an obligation to assure that the mineral resources of the Nation be developed, conserved, and utilized in the best possible manner over the longest possible period in order to enhance its security and commerce. Development of mineral resources is, of course, primarily a function of private enterprise. The Government must, however, continue to assist in many ways.

Thus the Minerals Policy Committee recognized that there may be nondefense problems in the minerals industries and, therefore, that, as is evident later in the report, these problems are beyond the scope of the Office of Defense Mobilization as a defense agency. I suggest, however, that where a domestic purchase program is about to terminate and where all defense needs have been met, the Congress should make provision beyond the scope of defense legislation to assist the industry by providing for the purchase of specified amounts from nondefense funds until the Congress has had time to consider recommendations from the appropriate nondefense agency, namely, the Department of Interior, for a long-range program.

Based on this approach, I have taken action necessary to insure the continuance of domestic purchase programs for six minerals under the authority of the Stock Piling Act or the Defense Production Act. These six minerals are: mica, muscovite bloc and film; metallurgical chromite, beryl; metallurgical manganese; metallurgical fluorspar; and antimony. In the case of mercury a review will be made at a later date to ascertain whether there is any need for extension or intensification of the program.

I also recommend that in the case of three minerals: chrysotile asbestos, acid grade fluorspar and tungsten—for which all defense needs have been met, the Congress pass such legislation and appropriate such funds as it deems necessary to provide interim assistance pending consideration by the Congress of a long-range nondefense program.

Mr. Chairman, that completes my statement.

Senator MURRAY. Thank you. It was a very fine statement, concise and to the point.

Dr. FLEMMING. Thank you, sir.

Senator MURRAY. I would like to ask Senator Malone if he would ask some questions.

Senator MALONE. Dr. Flemming, I think you made a very clear and concise statement, and I think you are doing a good job in the national-defense responsibility that is yours solely.

Dr. FLEMMING. Thank you, sir.

Senator MALONE. Now, taking these two minerals that you cannot handle because of the stockpile situation, tungsten, first, the reason that you cannot handle the situation further is, as I understand you, the stockpile requirements have been met.

Dr. FLEMMING. That is correct.

Senator MALONE. Now, are you aware that practically none of the purchases under the 1953 act have been used by the normal consumer in the United States?

Dr. FLEMMING. That is the amounts that have been mined under this program have all been put to the Government——

Senator MALONE. Yes.

Dr. FLEMMING. As contrasted with their being sold for nongovernmental use. That is my understanding, Senator Malone.

Senator MALONE. Are you aware of the reason for that situation?

Dr. FLEMMING. Well, it has been my understanding that they have been able to get it from other sources at a lower price.

Senator MALONE. Yes. The producers have sold to the Government under this program and under the practically free-trade setup, where there is no evener of wages or a duty or a tariff. Naturally, they can purchase the same product from the low-wage nations at considerably below the guaranteed price, which I think is somewhere around $41 to $43 a unit, is it not?

Dr. FLEMMING. We guaranteed $63.

Senator MALONE. No. I am talking about the possibility of purchasing——

Dr. FLEMMING. The market.

Senator MALONE. From foreign sources.

Dr. FLEMMING. That is right.

Senator MALONE. Low-wage countries that produce tungsten.

Dr. FLEMMING. My understanding is that it runs around $41 to $43.

Senator MALONE. Now, we are producing now at that rate, the normal consumption, peacetime consumption; is that right?

Dr. FLEMMING. I think that is correct; yes.

Senator MALONE. Now, let me ask you if you are aware that for 20 years the public was educated on the assumed fact that there was no tungsten to amount to anything in the United States and, therefore, you had to have this free trade and buy it from foreign countries. Are you aware of that fact?

Dr. FLEMMING. I understand that that position has been taken in the past; yes, sir.

Senator MALONE. Under the conditions that were set up, that is continually lowering of the duty or tariff, as it came to be known, that made up the differences in wages and cost of doing business in

this country and the chief competing nation, that made it impossible to produce tungsten here?

Dr. FLEMMING. Yes.

Senator MALONE. You are aware of that fact?

Dr. FLEMMING. Yes.

Senator MALONE. I think we agree that in case of war it would be impossible to bring this material across a major ocean?

Dr. FLEMMING. That is right.

That is why, Senator Malone, that is one good reason, for example, for setting of this long-term stockpile objective program, where we discounted our foreign sources of supply 100 percent.

Senator MALONE. Yes. And then I suppose it has something to do with your recommendation here that we do something now to carry this program along until such time as you can arrive at some permanent program?

Dr. FLEMMING. That is right.

Senator MALONE. There are only two ways, and I think you would agree with me, that you can stay in business in this country, not only in tungsten, but in many other materials, and it is becoming more widespread every day, but confining our conversation to tungsten, that either with a guaranteed unit price over a long enough period of time so they can open up a tungsten mine and amortize the cost and have a fair chance of a reasonable profit, guarantee that unit price enough above the world price to make up the difference in the wage, standard of living here, taxes, and the cost of doing business in this country and the chief competing nation, or revert to Congress in the control of foreign trade as provided in the Constitution and the national economy, and set that duty or tariff continually representing that difference.

Is that about the only two ways you can stay in business?

Dr. FLEMMING. Senator, if I responded directly to that question I would be anticipating a little bit the long-term program that the Department of Interior will present.

Senator MALONE. That is right.

Dr. FLEMMING. And I certainly agree with you that those are two ways of doing it. Now, whether the Department of Interior will come up with anything in addition to that, I do not know. But I would not want to anticipate their program at this point.

Senator MALONE. I accept that answer. It has been 2 years now since they were going to come up with a program, and they have not come up with it. So we do as you suggest, in this committee, fix a fair price which may be $55. At least it will be lower than the guaranteed price. We are in production. The evidence shows that we can cut the price.

But if we follow your recommendation and arrive at something that will keep the industry alive until you have a chance to come up with such a program, then that would fit in with your plans.

Dr. FLEMMING. That is right. That is our feeling.

Senator MALONE. When this bill was passed, it was known as the Malone-Aspinall Act of 1953, and we took occasion to try to determine what that difference——

Senator MURRAY. Senator Malone, we are called back to the floor again. I ask you to take the chair as your vote will not be necessary

over there. It is a reconsideration of the Payne amendment. You already voted in support of it.

Senator MALONE. Yes.

I have further information now that it might be a good idea for me to go. We will be back in just a second.

(Brief recess.)

Senator MALONE (presiding). Resume.

You used the term, Dr. Flemming, that I think we had explained this morning. It is "mobilization base." You might tell us exactly what you mean by a "mobilization base."

Dr. FLEMMING. That is our mobilization requirement, what you want, mobilization requirement or mobilization base. Of course, we think of mobilization base, using it in its broadest sense. We think of it in terms of the materials, the facilities, the equipment and human resources that we should have and would need, in order to deal with an emergency situation involving full mobilization.

Senator MALONE. In other words, you would want enough material on hand. We are talking about minerals now, but this really takes in the whole picture. You would want enough material on hand and arrange your "mobilization base," the term used, in peacetime so in a sudden emergency we are not caught short?

Dr. FLEMMING. That is it exactly.

Senator MALONE. That was explained this morning by Secretary Quarles, the Secretary of the Air Force, and very satisfactorily. For example, for considerable time, ever since World War II I think, there has been a restriction on the use of tungsten, as long as we are talking about that one metal.

Dr. FLEMMING. Yes.

Senator MALONE. And the reason for the restriction and the order to the people who were designing the jet engines, tanks, planes, and the various pieces of military equipment, that they would cut down on the use of tungsten whenever feasible by the use of other materials, even to the extent of weakening it to a certain extent—and that is not weakening it beyond a certain factor—but to do without tungsten in their design, was because of the lack of a mobilization base in tungsten.

Are you aware of the fact that they cut down the use of tungsten and used substitutes even to the extent of cutting below what they might have gotten in maximum strength by using the tungsten that they actually needed?

Dr. FLEMMING. Senator Malone, I of course was aware of the fact, that is, after the outbreak of hostilities in Korea, orders of that kind were issued by the Department of Defense in connection with a number of materials, including tungsten.

Senator MALONE. Yes.

Dr. FLEMMING. Of course I can see a reason for it at that particular time because our position was not anywhere as near as strong as it is today. Staying with tungsten, very frankly I cannot see any justification at the present time for such an order, because it seems to me whatever requirements Defense may have in connection with current production or whatever requirements they feel that they might have in event of mobilization can be met.

Senator MALONE. Since it has been amply proven, and I said before the success of the program works against me a little bit, that we are

now currently producing twice as much tungsten for the normal civilian needs and that you have a 5-year stockpile, the going concern production is such that coupled with the stockpile it is so far ahead of needs that there is no need of worrying about it at all.

Dr. FLEMMING. That is right, on the basis of our present requirements and information.

Senator MALONE. It has been amply proven, I think, to anyone who has studied it, that all they have to do to lengthen the program, providing they want to use more tungsten, so more could be developed, is to get more money spent in exploration in a chance of getting amortizing capital outlay plus reasonable expectation of a profit, and that you might double the production that you now have. So you would recommend if you were asked that they take the wraps off that business, would you not?

Dr. FLEMMING. I certainly would because, as I indicated to you, in the case of tungsten we not only met what we call the long-term stockpile objective, but we actually have on hand or will have when the contracts are completed enough to take care of our needs for 5 years, assuming that we did not get any supply from either a domestic or a foreign source.

Senator MALONE. Yes.

Dr. FLEMMING. So certainly I am not advocating that the Defense Department or anybody else go ahead and use it when there is not any reason or any justification for it. But as far as anything they need——

Senator MALONE. Anything that would strengthen their jet engines or cause them to have a longer life you would be in favor of?

Dr. FLEMMING. That is right.

Senator MALONE. I knew that is what you would say. I took the liberty this morning, not mentioning your name, but suggested, in view of the evidence, that Mr. Quarles do his own checking and to check with you, and we would like to see an order come out and just take the wraps off and make the jet engine and all other machines.

You mentioned foreign contracts. What do you pay, in these foreign contracts, a unit?

Dr. FLEMMING. Just 1 minute. I will check.

Senator MALONE. You might just read off the contracts that you have and maybe even the ones that have been fulfilled and how much you paid per unit and how much purchased.

Dr. FLEMMING. We would put in the record a complete list, but——

Senator MALONE. Just run over a few of them, whatever you like, and then we will put it in the record.

Dr. FLEMMING. Here is one, African Metal Co., $53. Here is another one, Bolivian tin and tungsten, $55 to $59.

Senator MALONE. $55—what to?

Dr. FLEMMING. There is a range there, $55 to $59.

Senator MALONE. What are some of the highest and lowest?

Dr. FLEMMING. The highest is $59. That is the O'Okiep Copper Co.

Senator MALONE. Where is that located?

Mr. CURTIS. That is in Africa.

Senator MALONE. You pay that price delivered here?

Mr. CURTIS. Yes, sir; that is delivered here.

Dr. FLEMMING. The lowest one is Beralt tin and wolfram, $47.50.

Mr. CURTIS. $45 to $46 seems to be the lowest price.

Senator MALONE. What were the amounts under these $59 and $55 and $53?

Dr. FLEMMING. $59, quantity, 78,764.

Senator MALONE. Units?

Dr. FLEMMING. Short-ton units, yes.

Senator MALONE. That is 20-pound units?

Mr. CURTIS. Yes, sir, short-ton units.

Senator MALONE. What are some of the larger contracts?

Dr. FLEMMING. Canadian Exploration was 555,000 at $55. That was entered into in 1951. All of these were 1951 and 1952. Another one was the Wah Chang Corp., 710,694, $55. That is from Brazil.

Senator MALONE. Well, that is enough. Now, when were these contracts made?

Dr. FLEMMING. 1951 and 1952.

Senator MALONE. All of them?

Mr. CURTIS. Except one.

Dr. FLEMMING. There was one that was finally completed on January 27, 1953. Outside of that all of them were 1951 and 1952.

Senator MALONE. Now, 1953 is passed along, so there was no tungsten, that is, no material amount being produced in the United States; that is, in the depression we did not have any tungsten.

Dr. FLEMMING. I am sure we were—of course, I do not know what was in the minds of those who entered into the contracts in 1951 and 1952, but I assume that was the situation.

Senator MALONE. How much of this tungsten is still to be delivered, just approximate, in percentage. I suppose the table shows how much has been delivered.

Dr. FLEMMING. I was just wondering here. As you know, the stockpile figures are classified, and I do not want to——

Senator MALONE. Do not get into that.

Dr. FLEMMING. That could lead to deduction as to what the stockpile objective was, and so forth.

Senator MALONE. Just use your own judgment.

Dr. FLEMMING. I think it better not.

Senator MALONE. Then it is well not to put this in the record at this time.

Dr. FLEMMING. We can do certain things with it. We can give you certain information from the table. Let me work on this and put in the record just as much as we can of the unclassified portion of the table.

Senator MALONE. That is very good.

Mr. Chairman, we had continued in accordance with your order here, and we find that there is approximately a million and a quarter tons of tungsten, 20-pound, short-ton units purchased abroad, mostly from Africa.

Dr. FLEMMING. Africa and Brazil and so on.

Senator MALONE. Africa and Brazil, from $47.50 to $55, most of it at $55.

Dr. FLEMMING. Yes.

Senator MALONE. The 555,000 units and the 710,000 units both are $55.

Dr. FLEMMING. That is right. That figure that you have given, of course, is not the total. Those were just illustrative.

Senator MALONE. Yes; I understand that, and you will put in whatever you feel you can say for the record without divulging any classified information.

And, Mr. Chairman, we have already brought out the fact that this mobilization base that you heard discussed this morning, the opinion of Dr. Flemming does not obtain anymore.

In other words, you have all the tungsten in the stockpile, plus our going-concern production here to take the wraps off any design in engines or anything else.

Mr. REDWINE. Yes.

Senator MALONE. And he would notify Mr. Quarles in the event he got that inquiry.

Now, Mr. Chairman, with the definite recommendations from Dr. Flemming, coupled with the information we have now gotten into the record, that the program be continued in a logical manner—I suppose you mean, after all the evidence is in, whatever the committee decides is necessary, that you would approve of that until such time as some other program comes up.

Dr. FLEMMING. You are speaking now of the tungsten and asbestos?

Senator MALONE. Yes, just the tungsten and asbestos.

The Assistant Secretary of the Interior, Mr. Wormser, I think, is prepared to discuss in more detail the kind of legislation that might be passed, but we feel that legislation that would provide for this interim period, provide for the continuation of a purchasing program at a reasonable price for the interim period at nondefense would make good sense and is the right and fair thing to do.

Now, then, in all of these minerals, I am sure you believe as I do, that only for this purchasing program there would be very small amounts in each case being produced in the United States at the present time.

Dr. FLEMMING. Well, I certainly think that is true in the case of tungsten, and I think it is true in the case of most of the others that we have talked about.

Senator MALONE. Now, I was going to ask you, in relation to columbium—columbium is something that you can make a jet engine without, but it is much better if you have it. I guess we agree on that statement, and the only production now is in Idaho, is it not? There is one source of production there in Idaho in the United States?

Dr. FLEMMING. That is right.

Senator MALONE. And you have a contract there that seems to be ample for the period?

Dr. FLEMMING. That is right, and that will go for approximately 5 years.

Senator MALONE. How would you encourage prospectors or explorers of minerals to search for new deposits? This contract only covers the one, so there would be no sale for any other source of columbium in the United States, unless you made an additional, separate contract, would there, under the present condition?

Dr. FLEMMING. That is correct. I mean, outside of this one contract there will not be any others continuing beyond June 30, 1957. I mean, the present purchase program extends to June 30, 1957—I am

sorry, that one was intended to go to June 30, 1957, but the quota has been filled, and it is closed, so you are right, the only contract in existence at the present time is this one contract.

Senator MALONE. And where are you getting the columbium outside of the United States? What is the principal source?

Dr. FLEMMING. I will ask Mr. Curtis on my staff.

Senator MALONE. Please identify yourself.

Mr. CURTIS. My name is Thomas Curtis, and I am Chief of the Iron, Steel, and Ferrous Alloys Section of the Office of Defense Mobilization.

The contracts for columbium are mostly placed with Nigeria. I see there is a little from Belgian Congo and a little bit from Norway.

Senator MALONE. What do you pay per pound or unit for the chromite in these contracts, from that Nigerian contract?

Mr. CURTIS. It is a complex price structure, Senator. It is based on 35 percent contained pentoxides in concentrates, which in 1951 was about $1.40 per pound. The Government then established this program as providing a hundred percent bonus to producers on that basis, so that if a man put to the Government this material of 35 percent concentrates, he would get $2.80. Now, there are premiums for richer concentrates which go up, perhaps as high as $5 a pound, depending on the richness of the ore.

Senator MALONE. I think that is all right.

Now, the domestic price, what does that contract call for?

Mr. CURTIS. The domestic price for Porter Bros.—this is the contract we are talking about—calls for the payment of $6.25 per pound. Now, the material that they will give to the Government will be a very high-grade material.

Senator MALONE. Conform to this $5 material?

Mr. CURTIS. It will roughly conform to the $5 level.

Senator MALONE. Well, now, tell me, in the use of columbium, if you know, the amount of columbium, generally speaking, in an ordinary jet engine, or in some way so we would have some idea in the record as to the extent of the use of columbium for comparative purposes.

Mr. CURTIS. Well, I can only say—I am not an expert in this particular field, but I believe it is in the nature of a very few pounds.

Senator MALONE. In a jet engine. I am sure it is, and I think we had all that testimony in Senate Report 1627 in the 83d Congress, but I wanted to verify it for this record.

Dr. FLEMMING. Senator Malone, I might say this: As you know, of course, there is a defense minerals exploration program under the direction of the Department of the Interior for which we use Defense Production Act funds, and I understand that this is a part of that program at the present time.

Senator MALONE. Is that for local United States production?

Dr. FLEMMING. That is right, domestic, and that would be on the exploration side of it. Now, assuming that that is successful at any point, whether or not anything further is needed or should be done is something that I would certainly like to consult Interior on. It is a question that we hadn't discussed before.

Senator MALONE. That would be all right. I hope you do consult them, but they have been in business now for the last 24 years, and they have always claimed we have had no columbium, we had no tungsten, we had nothing here at all, we must buy it from foreign sources, and

I do not have the greatest faith in their determining that we have these metals.

I have here that it takes seven-tenths of a pound of columbium for 1,000 pounds of engine thrust. In order to interpret that, it would be "a little." But it is like tungsten and manganese and other materials that are included in the 1953 act. At one time, trying to describe the amounts, it is just like the soda in the biscuits, it does not make much difference what you pay for it, because in the ultimate end product you can hardly find the additional cost. Is that about right?

Dr. FLEMMING. Does your testimony that you received this morning indicate there are any orders restricting the use of columbite in effect?

Senator MALONE. No, he did not go into that, because we had not had any testimony on that point. We did have testimony on the restriction of tungsten.

Mr. REDWINE. We did also on columbium last Wednesday when you were absent. Mr. Forry testified there was restiction on columbite, as well as tungsten.

Senator MALONE. We did not have that testimony this morning, so I would ask you again, with the columbium you have in the stockpile and the scale of delivery, what do you think of the availability of columbium?

Dr. FLEMMING. The way I would like to approach it is this: On the basis of the requirements information that has been furnished us by Defense up to the present time, as I have indicated, we have got enough on our minimum and long-term contract objective. In fact, when this 5-year contract is completed, we will have a supply that is in excess of that objective.

Now, if these so-called conservation orders are operating in somewhat the same way that they do on tungsten, we would certainly be willing to take a look at the situation with Defense and see whether or not the requirements information is as sound as it should be. If, in figuring their requirements, they have also taken into consideration their conservation orders, why, then it is altogether possible that the requirements figure is too low. If it is, we can take another look at it from the standpoint of defense.

Mr. REDWINE. Dr. Flemming, right on that point it seems from your testimony and Defense's testimony that we are up against a problem, particularly in tungsten and columbium: which comes first, the chicken or the egg. The Defense Department says you let them know what the availability of the material is, and then on the basis of availability they tell you what their requirements are. That is the testimony that seems to have been developed here.

Dr. FLEMMING. I would certainly like to look into that, because it is not my understanding of the way the thing operates. I mean, it is their job to indicate to us what the requirements are, what they need in order to do a good job, and then it is up to us to take their requirements, plus defense supporting or war supporting requirements, plus the requirements of a rock-bottom civilian economy, balance them over against supply and see what the gap is and go ahead on working to close the gap. So if a process such as you indicate has got cranked into this situation, I would like to know it and find out.

Mr. REDWINE. The testimony has been from Defense, from Mr. Forry, for instance, and his assistants, that in 1950 there was this first

restrictive order on tungsten, based on availability of tungsten received from you. In July of 1955 they modified that target a little bit to their manufacturers or designers, but since 1955 they have learned that we have a lot more tungsten than we thought, so on the 30th of last month they increased the target figure by about 25 percent.

You see, it would appear, Dr. Flemming, that there is a lack of coordination perhaps, between the two departments as to what they are basing their requirements figures on, that they furnish you, or what they understand the availability of the material is.

Dr. FLEMMING. Of course, I can see a real justification for that kind of a process in 1950 when we were short on so many of these materials, and certainly, in determining what their specifications were going to be for certain types of end items, I think it made good sense for them to take into consideration the availability of supply.

But if you stay with tungsten, I would say there is no longer justification for that kind of an approach, because of the amount that we have on hand and the additional amount we could get if we had to have it on hand.

Mr. REDWINE. Or if we can pass legislation.

Dr. FLEMMING. No, we would not need legislation in that case, although, again, they might step up their requirements considerably, and we would still have enough in the stockpile, because in this case we have got 5-year requirements without any source of supply available.

Senator MALONE. I think you are making a good witness, because you have said that there is a gap that we will have to bridge. Now, if we have it a little longer, then it may prove to be necessary, because you come in with a program it will take over, it makes no difference anyway.

Dr. FLEMMING. At the present time we feel that there should be an interim program, because as far as we can see, our defense needs have been met. Now, of course, anytime that we are given requirements that indicate that we have not met our defense needs, well, of course, we will set a new objective, and by authority of the Defense Production Act we can go back into another purchase program.

Senator MALONE. Now, Doctor, the reason I was questioning you on columbium particularly is because there is nothing in your power that you could do, or could you make another contract, a separate contract, with anyone who might discover some columbium?

Dr. FLEMMING. We would not be justified in using Defense Production Act funds under the present set of requirements.

Senator MALONE. All right, then. I have discussed this with some other persons who are interested in it, with members of the committee. On those metals that you are not in position to handle and to encourage prospecting or exploration, it might be a good idea to discuss in the committee, to have some general position so if a prospector showed up with a new deposit, which I think they will if the incentive is there, that he would have a market for it, and you might go into that.

Dr. FLEMMING. I would like to take a look at that situation, like to discuss it with the Department of Interior and let the committee know just how we feel.

Senator MALONE. We understand the mobilization base, and the minute we reach the position, either in this country or in the stockpile

and purchases, and then coupled with the domestic production, or at least in the Western Hemisphere, so it can be kept going in a war, any amount that might be needed in any emergency, the full amount that might be needed in speeding up—you call it—what was your term for it?—the mobilization base?

Dr. FLEMMING. For going into mobilization.

Senator MALONE. Then you can take the wraps off of that metal?

Dr. FLEMMING. Yes.

Senator MALONE. My idea is that—I am not going into it now—whenever a metal reaches that position, as tungsten, whenever there is that incentive that the producer can receive either a long-term guaranty or a tariff that makes up that difference between the cost here and the competing country, that is something we have preached a long time, and I think we have proved in now on tungsten.

Now, there are several Congressmen here who may have specific questions. Carroll, do you have any?

Mr. REECE. Thank you very much, Mr. Chairman, Senator Malone. I would like Dr. Flemming to answer one question, if I might.

In view of the clarifying statement you made at the bottom of page 6 of this prepared statement I take it that the manganese operators are safe in making the very considerable investments required, on the assumption that carload lot shipments will be accepted without regard to quota until June 30, 1961.

Dr. FLEMMING. Congressman Reece, I feel that they are justified, for this reason: If the program continues as it has been going up to the present time, or, to put it another way, under the present rules of the game, in my judgment the amount that would be put to us by 1961 would be within our stockpile objective, and I do not think that there would be any question about that at all.

Mr. REECE. And you plan to issue a directive?

Dr. FLEMMING. I plan to issue a directive to 1961.

Mr. REECE. And authorize shipments on high-grade ore without regard to quota?

Dr. FLEMMING. I think putting in "without regard to quota" would not be justified. There is a quota there, a 19 million long-ton unit.

Mr. REECE. Yes.

Dr. FLEMMING. And what I am in effect saying is that I feel up to 1961 there will be plenty of room within that quota. The fact of the matter is in my judgment that quota will be raised from 19 million to a figure higher than that as soon as the Department of Interior gives us information as to what we can get from our low-grade ores, and I think that the information that they give us as to what we can get from the low-grade ore is going to mean that we will have more room for high-grade than is apparent by the present 19-million-unit limitation.

So, really, what I am saying to you—and I appreciate the fact that this represents judgment, but I do not think there is any risk involved in it—is that we will, under the present rules of the game, be able to accept whatever is put to us up to June 30, 1961, in terms of the high-grade specification carload-lot program.

Mr. REECE. Thank you very much. I think that is all.

The CHAIRMAN. Does any other Congresman wish to ask any questions at this time?

Mr. REDWINE. Mr. Chairman, may I ask a question, please?

The CHAIRMAN. Yes.

Mr. REDWINE. Dr. Flemming, would you consider taking off the 10,000-ton limitation for individual shippers?

Dr. FLEMMING. Well, I would like to have Congressman Reece hear that particular question, because it ties right back in with my answer to his questions. I was asked whether or not we would consider taking off the present 10,000-ton limitation which is a part of the present rules of the game.

Certainly, I would be perfectly willing to take a look at that, but that changes the rules of the game and might result in it being put to us in much larger quantities than is the case at the present time.

Mr. REECE. The important thing that I have in mind, Mr. Chairman, if I may just add an additional word, the operators, in order to proceed with the program, will of necessity have to make some few million dollars' investment, and in order to make an investment of that kind they have to have some assurance that the program will be continued as the basis for the question I made.

Dr. FLEMMING. There is no question in my mind at all but that under the present rules of the game, which includes this 10,000-ton limitation, that we would be in a position to accept whatever is put to us through June 30, 1961. But, of course, if the suggestion is made that the rules be changed so that larger quantities could be put to us over any given period of time, I would have to take another look at the statement that I made to Congressman Reece.

But, on the other hand, I am perfectly willing to take a look at that problem. I will see what the nature of it is and see whether or not any change should be made in the rules of the game.

Mr. REDWINE. Will you do that, please?

Dr. FLEMMING. I will be very happy to, but I wanted Congressman Reece to understand if we change the rules of the game I would probably have to change my answer to his question to some extent, but we will take a look at it very quickly and report back to the committee. And I will also, Congressman Reece, let you know just what we find out on that.

Mr. REDWINE. Dr. Flemming, the committee is constantly reminded that it really takes more than 10,000 tons to recover on a large investment.

Dr. FLEMMING. Now, you mentioned it to me before the hearing, and I understood that there was some interest in the possibility of changing, although no one had talked to me directly about it, and I frankly would not want to answer off the cuff on it, because I am sure that there was a reason for putting that limitation in in the first place. I mean, the people, back in 1951, undoubtedly had a reason for putting the limitation in. I would like to take a look at their reasons for putting in that limitation, and I would like to have a staff memorandum which indicates to me just what would happen if the limitation were changed by—I assume by any amount, because I assume that that is what you have in mind, whether or not we would be willing to raise that 10,000 limitation to some other figure.

Well, we could take another figure, we can make a study to see just what that would do to the total program, who it would affect. I would not like to make an off-the-cuff answer to it until I have a chance to look at that kind of a staff memorandum.

Mr. REDWINE. Dr. Flemming, this as yet nebulous recommendation for legislation pending the testimony of the Assistant Secretary of the Interior—you have been sitting in on some of these conferences of that discussion, have you not?

Dr. FLEMMING. Yes, sir.

Mr. REDWINE. It is your feeling that this proposed legislation will meet complete administration approval, sir?

Dr. FLEMMING. Well, I feel sure that whatever Secretary Wormser proposes will be in harmony with the principle which I have stated in my testimony, and I can assure you that I would not present that testimony and make that recommendation unless I had the feeling that it did reflect the policy of the executive branch.

Mr. REDWINE. And it will receive also your hearty support?

Dr. FLEMMING. I have advocated it here, and I will continue to advocate it, either here or within the executive branch.

Mr. REDWINE. Dr. Flemming, in your various references in your statement you have asked GSA to make some reports. Perhaps we should ask GSA this, but perhaps you can answer it. How long do you think it will take them to supply you with that information so that you can issue the necessary directives?

Dr. FLEMMING. It seems to me that I should have it within a couple of weeks at the outside. That is the opinion of our staff people who work with the General Services Administration.

Mr. REECE. I would just like to ask one clarifying question which has reference to my reference to quotas. What I meant to say in my question was if we are to understand that if the existing quota should be exceeded before June 30, 1961, it is your purpose to continue accepting carload lots of high-grade ore until that time?

Dr. FLEMMING. No, Congressman Reece, in the way in which this and other programs have operated, when you reach your quota, if you reach it before the date in question, the program terminates. And if I can go back again, now, I think we are saying the same thing, only I am saying it in a different way, but I am saying it in such a manner as to make what I say consistent with the way in which all of these programs have operated. For example, if I may go back to my testimony in the beginning, I pointed out that the quota was 19 million long-ton units and that approximately 6 million units have been purchased by the Government up to the present time, and then I said this: "In view of the fact that there is still room in the long-term stockpile objective, it is clear that the carload-lot program can remain open until the quota is reached and that there is also a possibility of some increase in the quota." That has to do with the June 30, 1958 date. And then on the basis of the information that has been presented to us, as to the way in which the program has operated, the amounts that have been put to us under the present rules of the game with this limitation to which the clerk of the committee has referred, there was no doubt in my mind but that if I extended the program until June 30, 1961, that the quota would not be reached by that particular time, particularly in view of the fact that I think as soon as I get this information from the General Services Administration as to the low-grade program, that undoubtedly that quota can be increased.

In fact, I will say this. I do not want to be held to it as a final figure, but I mean rough figuring on the part of our own staff in-

dicates that that could be increased to somewhere around 25 million units, and that if we did increase it up to then, which we will do, something like that, as soon as we get the information, then there would not be any doubt at all but that people could count on continuing to put to us this carload-lot high-grade ore up until June 30, 1961. That is why I picked the date.

Mr. REECE. What I am trying to get at is if a miner, in order to develop an efficient operation, should be required, say, to invest $2 million, which he would be unjustified in doing if he could foresee the market until June 30, 1961, that he would be safe in doing it.

Dr. FLEMMING. I feel that he would, as long as we do not change the rules of the game. Maybe he would still be justified, even if we did change them, but I do not want to say that until I have gone into it and looked at it very carefully. I think he would be justified if we do not change the rules of the game, but if we pull up this limitation, then we have got a different picture.

This is an issue that has just been raised now that I am, of course, always willing to take a look at, but I want to be perfectly frank and indicate that that might change the kind of statement that I have made, and I think that has got to be taken into consideration in considering whether the rules of the game should be changed or not.

Mr. REECE. You make the rules.

Dr. FLEMMING. That is right, but let me say this, that if I were just responding off the cuff, that I would say that I am sympathetic with the present limitation as a principle. I mean, I think those who devised the program in the first instance and put that limitation in were wise in doing so, but I do not want to just off hand say that I would not raise that limitation without exploring it and seeing what that would involve. That is the only position that I am taking on that at this time.

Mr. REECE. Thank you very much.

Mr. REDWINE. Dr. Flemming, in reexamination of the low-grade program where you may get some additional units, just how does that come about? You had 6 million units at Wenden, 6 million at Deming and 6 million at Butte-Philipsburg.

Dr. FLEMMING. Those are the quotas.

Mr. REDWINE. Two of them have been filled?

Dr. FLEMMING. That is right.

Mr. REDWINE. Where will the extra units through examination of your low-grade manganese program come from that you can put in the carlot program?

Dr. FLEMMING. Where will they come from? Well, I mean, not all of this low grade meets stockpile specifications. I do not know how much of it will ultimately get into the stockpiles. See, we do not put it into the stockpile until it meets stockpile specification.

Mr. REDWINE. Is not that also true of some of these other metals, asbestos, for instance?

Dr. FLEMMING. That is right, and we take that into consideration. I think you will notice—and I think it was in the case of asbestos—we estimated—how much of it?—I think it was 10 percent, I recall, of it would finally meet stockpile specification.

Now, what we are doing, we are continuing the program in those cases until we get enough out of the law-grade that meets stockpile

specification to meet our stockpile objective, and so in the case of Wenden and Deming and Butte we do not yet know what we are going to get out of it that will meet stockpile specification.

Mr. REDWINE. Would that mean, then, that there is a possibility of those stations being reopened?

Dr. FLEMMING. No, the program was not for 6 million units of stockpile specification, this was a low-grade program. No, we feel that this carload-lot program is a program that is well worth encouraging, because it means that industry is discovering its own ways of beneficiating and in getting use the specification grade ore and that, in turn, is giving us a base that we can count on, so that I am very much interested in the carload-lot program for that reason.

Mr. REDWINE. Along that line, Dr. Flemming, the testimony that we had along that line last year about beneficiation of our low-grade ore, what sort of progress has been made toward beneficiating those low-grade ores?

Dr. FLEMMING. I would appreciate it if you would address that question to the Department of Interior. As my testimony indicated, I have asked for an up-to-date report on that that I can use as a basis for determining what we may get and that I can also then use to determine whether we should increase the unit.

Mr. REDWINE. I think Mr. Holderer has some question.

Mr. HOLDERER. Doctor, what do you suggest be done to bring our enormous low-grade manganese reserve on the Cuyuna Range closer to commercial success at a faster rate than we have been doing in the last few years?

Dr. FLEMMING. Just as I indicated a few minutes ago, I would appreciate that question being referred to the Department of Interior, or GSA, on the status of that process. Although Interior is clearly familiar with it, just what is going on with the process, itself, we have asked the GSA to bring us up to date on it.

Mr. HOLDERER. Does not the authority for the expenditure of money originate with them?

Dr. FLEMMING. To the extent that they use defense production, they will be the agency who will have to determine whether or not, from a policy point of view, we are justified in putting further funds into the operation, and GSA will operate under our directive. I mean, the responsibility is with us, but as to the exact status of these beneficiation projects, and so on, I do not have an up-to-date report right at the moment from the GSA and Interior.

Mr. HOLDERER. Coming to another subject, what arrangements exist between ODM and the Commodity Credit Corporation on some of these barter deals for minerals? Do they get notice from you as to what they should buy, or do they just go abroad on their own?

Dr. FLEMMING. On any purchase for what is called the supplemental stockpile under title supplement 104 of Public Law 408, the Depart of Agriculture proceeds on the basis of what is in effect the recommendation from the Office of Defense Mobilization. I have not seen the final draft of the agricultural bill—that is I have not seen the final draft of the bill that passed both houses of Congress just in the past 2 days, but if it is the same as the draft I looked at just a few days ago, it provides that all materials acquired by the Department of Agriculture by barter shall be placed in this supplemental stockpile,

unless they are required for the strategic stockpile, and that, in turn, means that the Department of Agriculture will proceed in acquiring materials for the supplemental stockpile under directives from us.

Mr. HOLDERER. Might not contracts that Commodity Credit would make abroad have the effect of enlarging these plants to the point where they would be a menace to our own home industry after that particular contract was filled? Take acid grade fluorspar, for example.

Dr. FLEMMING. It might have, and that is one of the factors that was taken into consideration before we put a material on the list that goes to the Department of Agriculture. In fact, we do not put a material on the list going to the Department of Agriculture until it has been looked at by the Interdepartmental Materials Advisory Committee, on which all of the agencies that have any interests in a matter of this kind are represented, and, of course, the Department of the Interior is very much alert to the situation as far as our domestic industry is concerned.

You are certainly right, that could happen, and it is a factor that we should and must and will take into consideration.

Mr. HOLDERER. Of course, it has happened, apparently, in the case of fluorspar, and it might in the case of metallurgical fluorspar.

Dr. FLEMMING. The barter transactions that have been carried on under title 83 of Public Law 480 have not been subject to this same restriction; that is, they have not been subject to it directly from ODM, but the various transactions that are carried on under title 1 of 104 are limited to materials that the Office of Defense Mobilization places on the list.

Now, if this new agricultural bill is signed by the President with the provision to which I have referred, it means that all of these transactions will be transactions for the supplemental stockpile, and that, in turn, means that the transactions will be carried on under directives from ODM, and ODM will not give them any directives until we have cleared the matter with all of the interested departments and agencies. I think the new law improves the situation considerably.

Senator BIBLE (presiding). Mr. Flemming, thank you for your testimony. We find the situation over on the floor of the Senate to be somewhat uncertain, to say the least, this afternoon, and it looks as if we might have several more votes on pending amendments to the housing bill. I think that you have made a definite contribution to the efforts of this committee to work out something realistic in the mining program. We are very grateful to you for at least being specific, so we know which way we are heading in this particular program.

It is my understanding that Mr. Wormser will fill in the details on these nondefense needs, as I understand your testimony. The hearing was originally set for 2 days. It looks as if we will probably take 2 days.

You will be available tomorrow, Mr. Wormser?

Mr. WORMSER. I will be delighted to be at your disposal.

Senator BIBLE. I think that will probably serve everybody better, because we will probably just get started on your testimony and then have to go back to the floor.

78488—56——22

So again voicing our thanks for your testimony, Mr. Flemming, we will stand recessed until 10 o'clock tomorrow morning.

(Mr. Flemming subsequently submitted the following:)

EXECUTIVE OFFICE OF THE PRESIDENT,
OFFICE OF DEFENSE MOBILIZATION,
Washington ,D. C., May 31, 1956.

Hon. JAMES E. MURRAY,
United States Senate,
Washington, D. C.

DEAR SENATOR MURRAY: In the hearing before the Senate Committee on Interior and Insular Affairs, certain questions were raised with regard to Government contracts for tungsten. I indicated at that time I would provide for the record such information as was feasible under security regulations.

The attached tabulation of active tungsten contracts provides, I believe, all the information of interest to you.

Sincerely yours,

ARTHUR S. FLEMMING.

Contract No. GS–OOP–	Contractor	Contract date	Unit	Current unit price	Quantity	Termination date	Origin	Delivered STU as of Mar. 30, 1956
614 (SCM)	King Island Scheelite	Feb. 6, 1951	Short ton unit, WO_3.	$55.00	462,437	July 9, 1958	Australia	270,613
724 (SCM)	Wah Chang Corp	June 22, 1951	do	55.00	710,694	Dec. 4, 1959	Brazil	179,845
1068 (SCM)	Minerales y Metales	May 1, 1951	do	50.00	609,026	June 30, 1958	Argentina	89,137
1336 (SCM)	S. A. Fermin Malaga	Oct. 11, 1951	do	55.00	349,880	Dec. 31, 1958	Peru	167,815
1455 (SCM)	International Mining Co	Aug. 24, 1951	do	55.00	378,879	June 30, 1956	Bolivia	249,697
1612 (SCM)	Canadian Exploration, Ltd	Oct. 2, 1951	do	55.00	550,000	June 30, 1958	Canada	329,338
2352 (SCM)	Comp. Montanas del Sur, SA	Dec. 3, 1951	do	53.00	105,134	Apr. 30, 1956	Spain	103,799
2415 (SCM)	Banco Minero de Bolivia	Feb. 18, 1952	do	50.59	300,000	Dec. 31, 1956	Bolivia	250,708
2486 (SCM)	Mauricio Hochschild	Jan. 2, 1952	do	59.00	225,178	Dec. 31, 1957	do	109,732
2610 (SCM)	Bolivian Tin & Tungsten	Dec. 31, 1951	do	55.59	336,436	do	do	215,925
2612 (SCM)	Compagnie Aramayo de Mines	Feb. 4, 1952	do	55.55	132,853	Jan. 31, 1957	do	103,437
2746 (SCM)	O'Okiep Copper Co	May 8, 1952	do	59.00	78,764	July 31, 1957	South Africa	38,764
2857 (SCM)	Storeys Creek Tin Mining Co	July 30, 1952	do	55.00	41,160	Apr. 21, 1957	Tasmania	28,418
3727 (SCM)	African Metals Corp	Jan. 27, 1953	do	53.00	28,534	Dec. 31, 1956	Belgian Congo	16,985
12224 (D)	Beralt Tin & Wolfram	Mar. 18, 1952	do	47.50	195,000	Sept. 30, 1957	Portugal	128,800
18034 (D)	Minerales de Compostela	Aug. 29, 1952	do	53.00	117,000	Mar. 31, 1957	Spain	93,635
18046 (D)	Compania Minera Moctezuma	Sept. 19, 1952	do	45.46	443,880	June 30, 1956	Mexico	367,000
	Total				5,064,855			2,743,648

Source: General Services Administration.

NOTES

1. A number of the above contracts contain maximum-minimum delivery clauses. The figures cited represent maximum deliveries.

2. About 90 percent of the units remaining to be delivered (2,373,739 on a maximum basis) should be at hand by June 30, 1958.

3. The contracts involve tungsten from foreign sources since domestic production was being acquired under the domestic offer-to-purchase program at $63 per unit.

(Whereupon, at 4:20 p. m., the committee recessed, to reconvene at 10 a. m., Friday, May 25, 1956.)

EXTENSION OF PURCHASE PROGRAMS OF STRATEGIC AND CRITICAL MINERALS

FRIDAY, MAY 25, 1956

UNITED STATES SENATE,
SUBCOMMITTEE ON MINERALS, MATERIALS, AND FUELS OF THE
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D. C.

The subcommittee met, pursuant to recess, at 10:15 a. m. in room 224, Senate Office Building, Senator James E. Murray (chairman) presiding.

Present: Senators James E. Murray, Montana; Alan Bible, Nevada; George W. Malone, Nevada; and Frank A. Barrett, Wyoming.

Also present: Senators Francis Case, South Dakota; Karl E. Munda, South Dakota; Barry Goldwater, Arizona; and Gordon Allott, Colorado.

The CHAIRMAN. The hearing will come to order, please.

The first witness this morning is Mr. Wormser, and you may proceed with your testimony, Mr. Wormser. Please state your full name and the position you occupy for the record.

STATEMENT OF FELIX EDGAR WORMSER, ASSISTANT SECRETARY FOR MINERAL RESOURCES, DEPARTMENT OF THE INTERIOR

Mr. WORMSER. Mr. Chairman, I am delighted to be here and do all I can to serve the committee. I am Felix Edgar Wormser, Assistant Secretary for Mineral Resources of the Department of the Interior.

Before dealing specifically with the various measures before the committee today, I should like to make some general comments. I should like to refer to the problems of assuring the Nation an adequate supply of mineral raw materials, both for security and for peacetime industrial needs; and of developing maximum returns from our own domestic mineral resources.

During World War II and again during the Korean hostilities, it was necessary for the United States to undertake costly and disruptive expansion programs, and to divert scarce machinery and equipment, manpower, and even military forces to obtain needed mineral raw materials.

Among the various efforts to secure such materials were the special purchase programs inaugurated under the authority of the Defense Production Act of 1950. These programs had a twofold purpose: (1) The immediate acquisition of strategic and critical minerals to meet stockpile deficits and (2) to develop new and continuing sources of dependable supply from domestic mines for defense purposes.

Several of the measures before you today seek to assure the continuation of these programs, to extend them beyond the dates on which they are now expected to terminate.

The Director of the Office of Defense Mobilization has testified that existing supplies of some of the materials covered by these programs are still inadequate for mobilization purposes and has indicated that ODM will authorize continued purchases of these materials. No additional legislative authority is needed to accomplish this. As to others, however, the Director of the Office of Defense Mobilization has stated that additional supplies are not needed for defense purposes, and that continuing purchases beyond those already scheduled cannot be justified under the Defense Production Act.

The Department of the Interior concurs completely with this position of the Office of Defense Mobilization.

Among those commodities with reference to which the Office of Defense Mobilization has stated that further purchases cannot be justified from a defense standpoint are tungsten and asbestos. We recommend, nevertheless, that special provisions be made by the Congress to continue purchases of these commodities for a limited period. It is believed that many of the mines which have been brought into producton under the stimulus of the Federal purchase programs for these commodities, if given a little more time, will be able to operate under normal competitive conditions.

The orderly termination in due course of the remaining programs should occasion little difficulty.

As these programs draw to a close the question inevitably is raised of what the Federal Government, or the Federal Government in cooperation with the States, should do in a peacetime economy to assist in the development and wise use of the Nation's mineral resources.

Last year, on the occasion of his veto of H. R. 6373, the President indicated that the interests of the domestic minerals industry would best be served by the application of the long-range programs then being developed, to implement the recommendations of his Advisory Committee on Minerals Policy, recommendations that he had approved in November of 1954.

In the preparation of departmental programs to encourage development of mineral resources we have to take into account the extreme complexity of the mineral industries and the widespread variations in which each mineral is found, mined, and utilized.

Mining operations deal with wasting assets. Government conservation policies seek the wisest and fullest use of these assets to achieve the maximum value and to assure future supply.

Nature is fickle in bestowing her mineral blessings upon various parts of the globe. Some countries have been favored with extraordinarily rich deposits of such minerals as tin, nickel, molybdenum, copper, coal, or petroleum, whereas others are completely devoid of important mineral products. Our great country has been particularly fortunate in what we have been given to work with, but one thing is unmistakably clear, namely, that our mineral resources are growing leaner. This is also true of mineral-producing areas elsewhere in the world. As time goes on, therefore, the world will have to discover additional ore deposits and work progressively lower grade ores. As this occurs, and if we continue to operate in a free market economy, I

expect that the prices of many metals and minerals will grow steadily higher, which, in turn, will encourage the mining of all available mineral deposits.

However, let me say at this point that our huge industrial appetite for metals and minerals cannot possibly be met solely from domestic resources except at frightful costs to the economy as a whole. We shall continue to be in part dependent on imports, a condition we must accept if we are to be realistic.

The United States consumes approximately half of the total world production of minerals, yet has only 7 percent of the world's population. The United States accounts for a third of the world's mineral production, yet we have only 5 percent of the world's land area.

For approximately one-third of the various minerals required by our economy we are completely dependent, or virtually so, upon foreign sources. Nature did not favor us with these minerals, or did so sparingly. These include such important minerals as tin, industrial diamonds, cobalt, corundum, sheet mica, manganese, chromite, nickel, the platinum-group metals, and quartz crystals.

For most of these minerals our dependency is not something new. We've always been dependent on foreign sources for an adequate supply.

For roughly another third of the various minerals consumed in this country, we produce enough for our needs and in several cases for export. These include coal, sulfur, boron minerals, bromine, diatomite, feldspar, limestone, lithium, magnesium, molybdenum, phosphate rock, potash, pumice, salt, silica, sodium compounds, talc, soapstone, tellurium, and vermiculite.

The remaining third of the various minerals entering our industrial mix we get in part from domestic sources, and in part from imports and scrap.

During the past few years, due to the rapid expansion of our economy, the gap has been growing between our demand for mineral raw materials and our ability to supply them from domestic sources at prices our economy can afford to pay. This is a matter of deep concern. Ordinary prudence would dictate that we should seriously ask ourselves whether we are making the best possible use of our mineral resources.

If we are to continue to supply from domestic mineral resources a substantial part of the demands of our economy for metals and minerals, either industry, or the Government, or both, must do three things:

1. We must pursue a program of increased geological research and investigation in the hope that we shall discover significant commercial deposits presently unknown.

2. We must improve the technology of mining and treating lower grade ores, so that mounting production costs do not gradually diminish output.

3. We must adapt to greater and more widespread use the materials we have in abundance. This involves a variety of problems in extraction, refining, and industrial design.

These were the major considerations which led the Cabinet Committee to emphasize the importance of expanding the Government's research activities in these three areas and the importance of cooperating with industry in this approach.

These programs proposed by the Cabinet Committee, largely of a research character, offer no immediate economic panacea for maintaining a strong domestic mining industry. It is the opinion of the Cabinet Committee, however—an opinion in which the Department of the Interior wholeheartedly concurs—that this approach will, over the long term, greatly benefit the American mining industry, multiply the opportunities for sound economic investment, and increase the available supply of metals and other minerals needed for our expanding economy. There is considerable evidence that this kind of program will yield significant results of long-term benefit to our economy.

In view of the need for more exploration, it is encouraging to note that on March 31, 1956, recoverable minerals and metals in the ores found on 234 projects certified by the Defense Minerals Exploration Administration were estimated to have a value of $265 million (DMEA participates to the extent of 50 to 75 percent of the costs of exploring for new sources of strategic and critical minerals).

The publishing of reports of geologic studies continues to stimulate prospecting, and major new discoveries have resulted.

Research by the Bureau of Mines and industry in the treatment of low-grade ores enables us year after year economically to work ores which a few years ago were not worth mining.

Illustrative of the practical value of research programs to generate new opportunities for the minerals industries and to find new uses for materials we have in abundance, I cite the important work by the Bureau in the synthesis of mica, and in the development of artificial abrasives as substitutes for industrial diamonds and corundum.

Research and experiments by the Bureau of Mines have assisted materially in establishing a new mining and metallurgical industry—the titanium industry. So successful have been these efforts that we are now well ahead of our defense and commercial titanium requirements.

Similar achievements have added zirconium, hafnium, selenium, germanium, and the rare-earth metals to our list of valuable minerals having significant contributions to make to our expanding economy.

Remarkable advances have been made by the iron-mining companies in the beneficiation of the low-grade taconite ores. Over $500 million is being spent by these companies to create a new iron-mining industry which will materially increase the availability of domestic ores.

At laboratories, pilot plants, and at operating mines—in cooperation with industry—the Government is carrying on research and technological studies on coal problems, such as mining methods, cleaning of fine sizes, blending of various coals and use of inerts in blends for making metallurgical coke, gasification of lump lignite for ammonia production and other chemical uses, conversion of coal to oil, and the use of anthracite as a partial substitute for coke in iron and steelmaking. Much of the recent resurgence in the coal industry has been enhanced by these studies.

The minerals research and development programs of the two primary minerals agencies of the Federal Government—the Bureau of Mines and the Geological Survey—have been greatly strengthened to implement the recommendations of the President's Cabinet Committee on Minerals Policy, and such activities will be materially expanded as funds and personnel become available.

In addition to Government participation in exploration, research, and improvement of technology, there are other important aspects of national policies which affect the production and utilization of minerals.

The long-term stockpile is important not only to security but to the domestic industry because of the indirect influence it can have in bolstering prices in weak markets. The substantial assistance given to the lead and zinc industries by stockpile purchases is a case in point.

In addition to the military stockpile, the Congress has authorized a supplemental stockpile in connection with the disposal of agricultural surpluses. Into this supplemental stockpile are going sizable quantities of strategic minerals obtained either by barter or by the purchases with local currencies obtained from the sale abroad of agricultural commodities.

The effects of this program upon the domestic mining industry may not be immediately apparent inasmuch as the minerals being procured are of foreign origin. If, however, we stop a moment to consider that most minerals move in international trade, and that minerals often compete with one another, it becomes clear that the lifting out of the international market of a surplus of any mineral commodity is likely to have a stimulating effect upon the world market for that mineral and conceivably upon the markets for competing minerals.

Perhaps the most important aspect of national policies affecting minerals is the maintenance of a favorable investment climate and a sound basis for our free-enterprise economy.

It is not mere coincidence that private enterprise should be investing $500 million in developing taconite ores, or investing millions in drilling the outer Continental Shelf, or in expanding facilities for mining and processing a dozen other minerals.

The overall economic policies of the Government have created such confidence among businessmen that they are forging ahead with ambitious plans for expanding industrial plant and equipment to supply the needs of an ever-growing population.

The mining industries of the United States last year shared with other industries in a recordbreaking prosperity.

The statistics of the Bureau of Mines, which keeps a careful record of our mineral progress, show that last year the value of our mineral production was over $15 billion. Some industries, like coal, that have been on a downswing for several years are now on the upgrade. Others, such as copper, iron, steel, aluminum, and petroleum, had unparalleled prosperity and profits. One can go right down the line covering molybdenum, lead, zinc, mercury, sulfur, in fact nearly all of the minerals, and find the same story revealed. It is a record in which we can all take pride.

To be sure, there are some weak spots. In a dynamic economy such as ours functioning under a philosophy of "free competitive capitalism," as it has been termed by the President, not everyone is successful. There are business failures even in times of great prosperity. It is part and parcel of our American way of life under which our country has grown strong. I do not think we would want it different.

If we can continue to maintain a high level of economic activity, and if we devote our best science and engineering skills to the tasks of

finding new mineral deposits, and making better use of what we have, I personally am convinced that our mining industries will continue to meet the heavy demand for mineral raw materials.

I am sure that many people have hoped that the administration would develop or support a program of continued purchases, at above market prices, of certain mineral commodities, even though existing inventories were such that these purchases could no longer be justified for defense. Some have felt that prices which would assure profits would result in significant new discoveries. Others have felt that the long-term interests of the Nation demand that we leave no stone unturned, regardless of cost, to reduce our dependence upon foreign sources for our peacetime needs.

In my opinion continuing Government subsidization of the mining of submarginal ores in peacetime will weaken rather than strengthen the domestic mining industry.

Under our system of free enterprise, healthy competition stimulates rather than retards economic development. Should the Federal Government undertake to maintain over an extended period of time the domestic price for any mineral or metal at an artificially high level, the domestic producer runs the very real risk of permanent loss of his market outlets by the development and introduction of a cheaper substitute.

Mine operators sometimes forget that the only thing that keeps them in business in our free American economy is their customers. If the customer decides not to use, say, lead or zinc, or if he finds he can accomplish his purposes by using iron or aluminum or plastic, the market suffers. The producer should think twice before he drives for a higher price for his output than an open market provides.

Mines blessed with rich ore can survive adverse business conditions. Others can only produce intermittently at a profit. Still others can only hope for continued existence during periods of extraordinarily high prices, such as generally obtain in wartime. All mines contain some ore which is marginal. The skillful mine manager arranges his operations so that he will make the utmost profit possible mining his lower grade ores during periods of high prices and husbanding his richer ores to tide him over in periods of depressed market prices.

In conclusion, it is my Department's recommendation that the Government not embark upon a program to subsidize in peacetime the mining of submarginal ores. Such action would not only be in conflict with our free-enterprise economy, but over the long term cannot be expected to yield the benefits to be derived from a more basic approach to the development of our natural resources as recommended by the Cabinet Committee, and being put into effect in the manner I have indicated.

We therefore recommend that each purchase program be brought to an orderly close when the material involved is no longer needed for defense. We do feel, however, that some continued assistance is needed in the cases of tungsten and asbestos to minimize economic dislocation and permit adjustment to competitive markets. We are submitting recommendations to accomplish this.

Mr. REDWINE. Mr. Chairman, may the record at this point show the report on S. 3379 from the Department of the Interior, which is the tungsten bill?

The CHAIRMAN. It will be carried in the record at this point.

(The report referred to follows:)

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., May 24, 1956.

Hon. JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
United States Senate, Washington, D. C.

MY DEAR SENATOR MURRAY: This responds to your request for the views of this Department on S. 3379, a bill to provide for the maintenance of essential production of tungsten ores and concentrates in the United States, its Territories, and possessions, and for other purposes.

We recommend that the bill not be enacted.

The bill would declare it to be the policy of the Congress that the continuance of domestic production of tungsten ores and concentrates shall be assured and that the dependence of the United States on overseas sources of supply shall be minimized. The bill would authorize the General Services Administration, upon the expiration of the current domestic tungsten purchase program, to establish a program for the purpose of 3 million short tons of tungsten ores and concentrates of domestic origin by June 30, 1959, at prices and on specifications no less favorable to producers than those in effect on January 1, 1956. The General Services Administration would be authorized to turn the material over to the strategic stockpile, if required for that purpose, or to sell it to industry at a price no less than the cost of acquisition. The bill would also authorize the direct appropriation of funds for the proposed program.

We are advised by the Office of Defense Mobilization that additional quantities of tungsten are not now required for defense purposes under the criteria of the Defense Production Act, as amended. It appears that stockpile goals for this commodity have been attained. Accordingly, the proposed program cannot be justified on the ground that accumulation of additional quantities of this material are needed for reasons of national defense.

At the present time, domestic production of this commodity is running at the rate of about 1 million units per year. Domestic consumption in 1955 was slightly more than one-half this amount. Almost all of the domestic production is being delivered to the Government under the present purchase program while current industrial needs are being supplied from imports. The current United States market price for imported material, including duty, is approximately $41 to $43 per unit and the price being paid domestic producers by the Government under the present purchase program is $63 per unit. The present purchase program, under the Domestic Minerals Program Extension Act of 1953, is scheduled to extend to July 1, 1958, unless purchases amounting to 3 million short-ton units are delivered at an earlier date. We are advised that the total quantity will have been delivered to the General Services Administration by the end of the month of May 1956, at which time the present program will be terminated.

The Government purchase program has brought into being an industry which, if its total production at the present rates were to be available solely to industry, would result in a surplus of approximately 50 percent of its total output. While it is extremely important to know that this country is able to produce this large quantity of tungsten at $63 per unit, and recognizing that the industry has done a monumenal job of expanding and of developing and perfecting its techniques of beneficiation, the plain fact must be faced at this time that it is unrealistic to continue to support such a large surplus production when there is no defense justification for so doing. S. 3379 would continue accumulations by the Government of the total domestic production for another 3-year period.

It is recognized, however, that tungsten is a commodity of great strategic importance and that it has important applications not only in armaments and weapons, but also in our expanding peacetime industries. It can reasonably be expected that this material will be used in increasing quantities as new industrial applications are developed. Yet, it is obvious that, unless some Government assistance is given at this time to continue production, it can be expected that most of the domestic mines will have to shut down. We consider it important, therefore, that this defense-oriented industry be redirected to its proper position in our economy and be geared to peacetime competitive markets rather than be lost, perhaps irretrievably. This must be accomplished in a manner that will minimize economic dislocations and at the same time retain the essential productive capacity which was generated by the defense purchase programs.

In order to accomplish a transition to a level of production reasonably consistent with domestic requirements, it is deemed desirable to effect a slowdown of production as quickly as possible. However, to accomplish this objective, we recognize that it is necessary to give some measure of assistance to the industry for a limited period of time.

The Department of the Interior is of the opinion, therefore, that if it be the will of the Congress to provide such assistance to the tungsten-producing industry through a transition period, an extension and modification of the purchase program would be the most effective means of accomplishing this objective. We suggest that consideration be given in that event to a purchase program for a period of not more than 2 years, with purchases being limited to a total quantity of 1 million units and at a price of not to exceed $52.50 per unit. The quantities which could be delivered to the Government from any one mine should be limited in order to keep in being the broadest base of production. The specifications for the material can remain the same as those currently in effect.

Since there is no defense justification for this action, such a program should be financed by direct appropriation of the Congress and the material so accumulated should be held by the General Services Administration to be made available to the stockpile, if required, otherwise to be turned over to the supplemental stockpile created for strategic and critical materials in accordance with the provisions of the act of July 10, 1954 (Public Law 480, 83d Cong., 68 Stat. 454). It is estimated that such a program will cost $52,500,000.

The Bureau of the Budget has advised that there is no objection to the submission of this report to your committee.

Sincerely yours,

F. E. WORMSER,
Assistant Secretary of the Interior.

Mr. REDWINE. Mr. Chairman, may the reports from Interior on the various bills be inserted in the record at the appropriate places?

The CHAIRMAN. That will be done.

Senator MALONE. Mr. Chairman, what was this bill suggested as the bill?

Mr. REDWINE. It was not suggested as the bill. It is the only bill that the Department has reported on, S. 3379. S. 3379 is a combination bill, is it not, Senator? The single bill on tungsten is S. 3379.

Senator MALONE. There is one other. Find out what they are. Let us have them appear at this point. They are bills I introduced myself, and I think others have introduced such legislation.

Mr. REDWINE. We have no record of it, sir.

Senator MALONE. You may mean that you have not seen them. They are here in the committee. I introduced them myself. We are discussing bills to do the job so let us mention the prepared legislation in the committee.

Mr. REDWINE. Senator, are you referring to the combination bill dealing with tungsten alone, sir?

Senator MALONE. My bill S. 2876 includes tungsten and a simple extension of each of the seven minerals that are included in the Malone-Aspinall Act of 1953 which included tungsten. I introduced a separate bill on tungsten, S. 3794.

Mr. REDWINE. Senator, that bill was taken from the jurisdiction of this committee and is in Finance.

Senator MALONE. When was it taken? I also introduced a bill, S. 3792, to include all strategic minerals and materials which would, of course, include tungsten.

Miss N. D. MCSHERRY (assistant chief clerk). It is to go to Finance. Finance has requested it. I don't know whether the Senate has acted on it yet or not.

Senator MALONE. It was assigned to this committee. Find out where it is.

The CHAIRMAN. Do you have a copy of it?

Senator MALONE. Note it in the record the same as the other bills.

The CHAIRMAN. Do you have some questions, Senator?

Senator MALONE. I think you made a very elaborate statement, Mr. Secretary. Some of the terms you use are a little confusing to me. A general question: Do you recommend that we import ores for our own use and save our own in the United States as Mr. Ickes, a former Secretary of the Interior used to do?

Mr. WORMSER. No, sir.

Senator MALONE. What do you mean by "favorable investment climate"?

Mr. WORMSER. Speaking broadly, Senator, I would say you have a favorable investment climate, speaking of the mining industry, when you have a combination of factors that in your estimation will lead to some profitable mining operation.

Senator MALONE. What are they?

Mr. WORMSER. Of course in the first place you must have a mine or something that you think will be the making of a mine.

Senator MALONE. What would you describe as our favorable investment climate now? Could you tell us about it?

Mr. WORMSER. I think, Senator, you have to break that down commodity by commodity.

Senator MALONE. Let's take tungsten. We are talking about tungsten today principally, and probably asbestos, since Dr. Flemming testified that they are practically the only 2 metals out of the 7 in the 1953 Malone-Aspinall Act that he could not handle. The columbium-tantalum situation is covered by a GSA contract with a single Idaho producer—perhaps we should include this indispensable metal.

Mr. WORMSER. If I were a tungsten operator I would certainly look into the situation with respect to the richness of my ore deposit and the likelihood of favorable market conditions specifically.

Senator MALONE. What are these favorable market conditions?

Mr. WORMSER. I would say having a good market outlet and having a lot of customers in American industry who were willing to buy my product.

Senator MALONE. At what price?

Mr. WORMSER. That would be subject to bargaining between producer and consumer.

Senator MALONE. The world price?

Mr. WORMSER. Of course we have a world price on all of these.

Senator MALONE. That is what you are talking about, is it not? You would have to sell it at the world price in the absence of any principle laid down by Congress where a flexible duty or tariff would represent the difference between the wage standard of living, taxes and the general cost of doing business here and in the chief competitive nation, or in the absence of such a duty a guaranteed price which would represent that difference. In the absence of either of these arrangements, American producers are in direct competition with the world price, are they not?

Mr. WORMSER. Definitely, in their absence, without a tariff or subsidy.

Senator MALONE. You can call it a subsidy. I do not happen to call it a subsidy when you need no more addition to the world price than the difference that is represented in the higher wages, taxes, and the cost of doing business here and in the chief competitive nation.

You can call it whatever you want to call it, but if that difference is represented by either a guaranteed price, or through a duty, as the Constitution provides in article I, section 8, you are in business—in this country. That is amply shown by the present production of tungsten. Do you want to remove both of these conditions and compete with the world price?

Mr. WORMSER. I am not advocating that.

Senator MALONE. What are you advocating?

Mr. WORMSER. Since we are speaking of tungsten, perhaps I had better read our Department's recommendation.

Senator MALONE. I have read it already. I just move that it be made a part of the record. You can tell me what you think we should do. I move that this letter be made a part of the record, Mr. Chairman.

The CHAIRMAN. Yes.

Mr. WORMSER. I thought I would like to——

Senator MALONE. You remember what you said in the letter.

Mr. WORMSER. It is a long letter.

The CHAIRMAN. Do you want that in the record at this point?

Senator MALONE. Yes.

The CHAIRMAN. What is the recommendation of the document?

Senator MALONE. It is a letter to the chairman, I presume, from the Assistant Secretary, Mr. Wormser.

The CHAIRMAN. It will be placed in the record.

Mr. WORMSER. Perhaps if I read one paragraph, Senator.

Senator MALONE. I thought it would save time if you would just tell us what you advocate.

Mr. WORMSER. I think it is necessary to go into the background here. The Department has looked at the background carefully in order to come to its conclusion. As a matter of fact, it is not a very long letter. If you don't object, Mr. Chairman, I would like to read it in entirety.

Senator MALONE. Go ahead. We have plenty of time.

Mr. WORMSER (reading):

At the present time, domestic production of this commodity is running at the rate of about 1 million units per year. Domestic consumption in 1955 was slightly more than one-half this amount. Almost all of the domestic production is being delivered to the Government under the present purchase program while current industrial needs are being supplied from imports. The current United States market price for imported material, including duty, is approximately $41 to $43 per unit and the price being paid domestic producers by the Government under the present purchase program is $63 per unit. The present purchase program, under the Domestic Minerals Program Extension Act of 1953, is scheduled to extend to July 1, 1958, unless purchases amounting to 3 million short-ton units are delivered at an earlier date. We are advised that the total quantity will have been delivered to the General Services Administration by the end of the month of May 1956, at which time the present program will be terminated.

The Government purchase program has brought into being an industry which, if its total production at the present rates were to be available solely to industry, would result in a surplus of approximately 50 percent of its total output. While it is extremely important to know that this country is able to produce this large quantity of tungsten at $63 per unit, and recognizing that the industry has done a monumental job of expanding and of developing and perfecting its

techniques of beneficiation, the plain fact must be faced at this time that it is unrealistic to continue to support such a large surplus production when there is no defense justification for so doing.

May I say also any commercial reason for doing so.

Senator MALONE. Right at that point, as long as you have interpolated, I might ask if you think any industry that is not important to national defense is entitled to exist in this country.

Mr. WORMSER. We have lots of industries, sir, that are not important to national defense. The amusement industry, for example.

Senator MALONE. The amusement industry, yes. I think that is about all we will have left pretty soon under the free trade policy and that only because you can't go to a foreign country every night to get it cheaper.

However, I am talking to you today about industry on our standard of living wages. Do you believe that there should be a program of free trade and that any industry in the United States that cannot exist in competition with the low-wage standard of living in Europe and Asia is not entitled to exist?

Mr. WORMSER. Senator, I don't believe in free trade.

Senator MALONE. You believe in what we are doing; do you not? Your letter indicates that we should compete with the world price.

Mr. WORMSER. I believe in what the present administration is doing.

Senator MALONE. You are continuing the 1934 policy of continually lowering duties below the difference in the cost of production here and abroad. You call it reciprocal trade. But other nations protect their workingmen and investors. The policy has resulted in a complete abandonment of the American workingmen and investors. We are living on a war economy—$5 billion to Europe to buy our goods, $35 billion for defense annually. The present duty or tariff does not represent the difference in wages here and in the chief competing country on tungsten. I speak of tungsten, but there are 5,000 other industries that we could discuss in the same category. What does the reduced duty or tariff now existing on tungsten represent? It does not represent the difference in labor costs. It does not represent the difference in taxes between this Nation and the chief competing country. It does not represent the difference between doing business here and in the chief competing country; does it?

Mr. WORMSER. Senator, I would like to explore that tariff situation with particular reference to tungsten. May I finish my statement?

Senator MALONE. You interpolated, so I thought I would help you.

Mr. WORMSER (reading):

S. 3379 would continue accumulations by the Government of the total domestic production for another 3-year period.

It is recognized, however, that tungsten is a commodity of great strategic importance and that it has important applications, not only in armaments and weapons, but also in our expanding peacetime industries. It can reasonably be expected that this material will be used in increasing quantities as new industrial applications are developed. Yet it is obvious that, unless some Government assistance is given at this time to continue production, it can be expected that most of the domestic mines will have to shut down. We consider it important, therefore, that this defense-oriented industry be redirected to its proper position in our economy and be geared to peacetime competitive markets rather than be lost, perhaps irretrievably. This must be accomplished in a manner that will minimize economic dislocations and at the same time retain the essential productive capacity which was generated by the defense purchase programs.

In order to accomplish a transition to a level of production reasonably consistent with domestic requirements, it is deemed desirable to effect a slowdown of production as quickly as possible. However, to accomplish this objective, we recognize that it is necessary to give some measure of assistance to the industry for a limited period of time.

The Department of the Interior is of the opinion, therefore, that if it be the will of the Congress to provide such assistance to the tungsten-producing industry through a transition period, an extension and modification of the purchase program would be the most effective means of accomplishing this objective. We suggest that consideration be given in that event to a purchase program for a period of not more than 2 years, with purchases being limited to a total quantity of 1 million units and at a price of not to exceed $52.50 per unit. The quantities which could be delivered to the Government from any one mine should be limited in order to keep in being the broadest base of production. The specifications for the material can remain the same as those currently in effect.

Since there is no defense justification for this action, such a program should be financed by direct appropriation of the Congress and the material so accumulated should be held by the General Services Administration to be made available to the stockpile, if required, otherwise to be turned over to the supplemental stockpile created for strategic and critical materials in accordance with the provisions of the act of July 10, 1954 (Public Law 480, 83d Cong.; 68 Stat. 454). It is estimated that such a program will cost $52,500,000.

The Bureau of the Budget has advised that there is no objection to the submission of this report to your committee.

To come back to the tariff, Senator, and applying it to tungsten, suppose we had a tariff 10 times or a hundred times larger or had a complete embargo so no tungsten from foreign countries came to the United States, it would mean that we still would be turning out 1 million units of tungsten when the market can take only 500,000. That is certainly not going to help the mining industry.

Senator MALONE. Well, I have news for you. If you had the duty or tariff adjusted to the difference in wages and costs, you would not need the purchase program. Therefore, the American producers would compete for the American market.

When the American market no longer absorbs it, the higher cost operations shut down. It is a competitive American method to serve the American market. It is the truly American method. Do you approve of it?

Mr. WORMSER. I don't know that I get your point.

Senator MALONE. I will try again. The point is, if you have a tariff or a duty, as the Constitution calls it—and directs Congress to adjust it in the regulation of foreign trade and the national economy—then you adjust the flexible duty or tariff through the Tariff Commission on the basis of fair and reasonable competition, so you take the profit out of the low-cost labor at the water's edge. They have equal access to the American market but no advantage.

If the Tariff Commission, an agent of Congress, was allowed to adjust the duty on that basis, the purchase program would be unnecessary. The American producer is then competing for the American market.

When you are competing for the American market you are in competition with fellow Americans in the truly American way.

That is all there is to it. It is a very simple thing. I would not expect the usual Government official to understand that, but, coming from private business, ought to grasp it.

Mr. WORMSER. Senator, I can only comment that if we could see our way clear to tariff relief to keep these mines going we would be in-

clined to advocate it; but, frankly, somebody will have to close down even if you doubled or trebled or quadrupled the tariff.

Senator MALONE. Let American producers compete for the American market. You know that American producers cannot sell anything in the foreign market for two reasons, first, we have priced ourselves out of the foreign market through inflation, and second, if you tried to export tungsten to a foreign tungsten-producing country, they would stop you at the border. They would not let you bring a pound of tungsten into their country. I think you know that. We are the only nation on earth today that does not protect its own investors and workingmen from the competitive setup.

I state it to you again just as simply as I know how. I have even proposed as a substitute, at the earliest time when these programs on tungsten, manganese, and the rest of them run out, to turn it over to the Congress, to the Tariff Commission, as agent of Congress, and let them adjust the duty on the basis of fair and reasonable competition, and forget your purchase program. Then the American producers are competing here for the American market. Of course there is no product protected on that basis since the 1934 Trade Agreements Act was passed—35 nations of which we are one, regulate our foreign trade and our national economy in Geneva under the General Agreement on Tariffs and Trade.

Do you understand it?

Mr. WORMSER. I understand it.

Senator MALONE. Do you like it?

Mr. WORMSER. I can say I am not a free trader. I believe in protection for our American industry.

Senator MALONE. Then you believe in the duty making up the difference.

Mr. WORMSER. Not necessarily.

Senator MALONE. Then go ahead and explain what you believe in. The committee is very receptive. What we want to do is keep these mines open until your Cabinet Committee comes up with the better plan that you have been promising us with for a long time. You know and I know you cannot establish such a method except 1 of 2 ways: either fixing the price by law on the product which represents the difference in the labor, taxes, and cost of doing business in the chief competing nation, or a flexible duty which does the same thing.

If you do come up with any other system that will stabilize the industries, you are a miracle man and I congratulate you. But we have to have interim legislation now and the committee, as Dr. Flemming suggested is working with the administration right now.

Dr. Flemming testified yesterday that he recommended interim legislation that would keep these mines open pending the time that you come in with a program. Do you believe we ought to do that?

Mr. WORMSER. I believe so far as the cost is concerned it is certainly desirable to keep them going, but I am convinced we have to bring them down to a basis where they are probably not overproducing.

Senator MALONE. For 20 years the Department that you work with said we had no tungsten at all. The Malone-Aspinall Act of 1953 of course showed the utter fallacy of that kind of talk. I will come to that later, but right now we are on the question of what you yourself think about it, and I would like very much to have your answer.

In the absence of any guaranteed price, representing the difference between the labor cost here and abroad, there is only one avenue left. It is free trade whenever you go below that differential in cost of labor, taxes, and the cost of doing business against the chief competing nation, because if it is 10 percent below that differential the American producer has to come down that 10 percent on their labor, taxes, and cost of doing business in this country to stay in business. I think you would agree with that, would you not?

Mr. WORMSER. We certainly have to recognize the disparity in our costs abroad and in this country, that is right.

Senator MALONE. That is right. In other words, you have to meet the world competitive price, if you do not have a duty to represent the difference in wages and general costs of doing business here and in the chief competitive nation on each product.

Mr. WORMSER. As a matter of fact, there is a lot of reason for having tariff protection to adjust the labor difference.

Senator MALONE. Do you not have to have a duty or fixed price? Don't you have to meet the world cheap labor price unless you have that differential represented in a guaranteed price or duty?

Mr. WORMSER. You certainly have to meet competition internationally in all of these metals and minerals. That is the predicament the domestic producer is in. He has to face that.

Senator MALONE. How did they come to be in that predicament? We did not have to face it from 1889 to 1934.

Mr. WORMSER. We have had an international market, Senator, as long as we have had the mining industry.

Senator MALONE. You have, but also we had duty or tariff protection.

Mr. WORMSER. Tariff protection is traditional in our country.

Senator MALONE. That is correct, it is traditional, but it has not prevailed since 1934; has it?

Mr. WORMSER. We still have tariff protection—reduced, to be sure.

Senator MALONE. We do not have tariff protection at all for the standard of living when you go below the differential of the difference in wages because you have to meet the world price plus the reduced duty. Do you not?

Mr. WORMSER. In competing in the world market, yes.

Senator MALONE. That is right—not competing in the world market, but competing for your own American market.

Mr. WORMSER. In your own market.

Senator MALONE. You understand that.

Mr. WORMSER. Definitely.

Senator MALONE. Then what do you believe we ought to do in the matter of a duty in the absence of a guaranteed price?

Mr. WORMSER. I think that would have to be explored very carefully.

Senator MALONE. We have explored it now for 24 years here, 20 years under the Roosevelt-Truman administration and for 3 years under our administration. How much longer do you need to realize that we cannot compete with the low wages of Europe and Asia?

Mr. WORMSER. I am afraid I can't answer that, Senator.

Senator MALONE. Do you think 4 years more would do it?

Mr. WORMSER. I have no idea.

Senator MALONE. Well, I have some other questions for you. I don't want to belabor the question. I think the record will be very clear that you have to have a guaranteed price or a duty that represents the difference in the American wages and the wages in the chief competing country on each product.

Mr. REDWINE. May we at this point clear up the matter of the bill you asked about?

Senator MALONE. Just put it in the record. Mr. Wormer, you talked about submarginal ores. What do you call submarginal ores?

Mr. WORMSER. One that cannot be mined at a profit.

Senator MALONE. Under the conditions obtaining at the time, free trade and no guaranteed price?

Mr. WORMSER. Exactly.

Senator MALONE. What are those conditions now in the absence of legislation fixing a price representing the difference in wages?

Mr. WORMSER. I would say the market would determine whether you compete. In the free American economy and the free market that we have, the market fluctuates from day to day and week to week.

Senator MALONE. What you are talking about is a free world market, isn't it?

Mr. WORMSER. Both. We have free markets domestically and we have free markets internationally.

Senator MALONE. But you do have a free world market today in practically everything where, in the absence of a duty or a fixed price, we are in direct competition with the cheap labor markets of the world; isn't that right?

Mr. WORMSER. We certainly are in practically all metals and minerals.

Senator MALONE. And practically all other materials, such as textiles.

Mr. WORMSER. Practically all materials, that is right.

Senator MALONE. By submarginal ores, then, you mean it is submarginal when you cannot meet the world price of such products produced by cheap foreign labor in competition with our higher wage-standard of living.

Mr. WORMSER. It might also be submarginal even if we had the highest conceivable protection. You still might have ore so low grade that you could not possibly compete.

Senator MALONE. I think you are belaboring the question, so let me make it a little clearer to you.

With a flexible duty equaling the difference in wages we would compete with each other for the American market, but now we are competing with the $2, $3, and 50-cent-per-day foreign wages for the American market.

Mr. WORMSER. We certainly are in a good many markets.

Senator MALONE. We sell tungsten in no other markets. We are producing tungsten because of the fixed price making up the difference in wages here and abroad.

Mr. WORMSER. We certainly are not approaching Asiatic labor.

Senator MALONE. It is impossible to compete with Asiatic or European labor. I am coming to some contracts that you have with South African companies.

Mr. WORMSER. That is not in Interior, sir. That is ODM.

Senator MALONE. Interior is in the same Government.

Mr. WORMSER. That is true.

Senator MALONE. Do you communicate with each other at all?

Mr. WORMSER. Very closely, sir.

Senator MALONE. Well, that is helpful and you should be informed about the contracts. I would like you to explain this phenomenon to me, then, in your own words. It does little good for me to say it once more, since I have been saying it in debates since I have been in the Senate. Explain to me why you call everything submarginal ores or submarginal textiles, or submarginal whatever it is, when they cannot compete with the world price produced with low Asiatic and European wages.

Mr. WORMSER. That is a fair statement.

Senator MALONE. Then what you meant in your statement in that they were submarginal in this country when they cannot compete with the low foreign wages.

Mr. WORMSER. They are submarginal if they cannot compete.

Senator MALONE. With the world price.

Mr. WORMSER. With the world price.

Senator MALONE. All right. I am sorry to take so much time, Mr. Chairman, but I think we have to make these points clear. I do not believe any production in this Nation is submarginal unless it cannot compete after a flexible duty has taken the profit out of the low foreign wages at the waters edge.

What was your implication when you said that our ores are being depleted and that we have only 7 percent of the population of the world and 5 percent of the area of the world in the United States? It is about 6½ percent, but I won't belabor the question. What was the implication or meaning of that statement?

Mr. WORMSER. The implication there is my anxiety as to how we are going to fill the insatiable appetite of the wonderful American economy for the metals and minerals required.

Senator MALONE. It would be mine, too, under the free trade conditions which obtain now and have since 1934 because there is no incentive to find them.

Mr. WORMSER. I am thinking, Senator, of the huge quantities we need. Look at the record over the period of years. It is just phenomenal the way our requirements have grown.

Senator MALONE. Everything is relative, isn't it? The requirements for tungsten have increased by leaps and bounds—but under the Malone-Aspinall Act we are producing about twice the annual consumption. We are importing huge amounts of manganese from India knowing full well that we cannot get a pound of it when a war starts—are we doing that to save our own?

Mr. WORMSER. I don't think that is the reason. We are importing because it is available in the open competitive market and the requirements are so huge.

Senator MALONE. You made our production openly competitive with the world price by lowering the duty, did you not?

Mr. WORMSER. That I am not prepared to say. I don't know what the motive was for that.

Senator MALONE. I do not know what the motive was, but I know what the result was. Do you? The result was the importation of practically all the manganese we use.

Mr. WORMSER. I think we supplied only 10 percent of our requirements for our domestic economy.

Senator MALONE. That is right because we cannot compete with the low wages in India. Are you familiar with the fact that in the Cuyuna Range in Minnesota, with the method of operating in that area and with the improved beneficiating processes for that ore, that huge amounts can be produced with any reasonable duty making up the differences in wages?

Mr. WORMSER. That is a very encouraging development, Senator. I am not familiar with that fact.

Senator MALONE. I will not belabor that subject. We will get to manganese after a while. It is tungsten that we are interested in right at the moment, because Dr. Flemming recommended definite legislation to bridge the gap between the amounts of tungsten produced under the 1953 act, to which I have already referred, and this plan that you are coming up with from the Cabinet one of these days.

I have read your letter, and you recommend a price of $52 per unit for tungsten. We now have a $63 price. We held very complete hearings here and the gist of our evidence is that $55 a unit is about right. That is to say, some of the larger operators might be able to operate on $52, the smaller ones especially would need around $54 or $55, and $55 seemed to be very safe. That is only $12 a unit higher than the world price, and it can be shown that is needed to represent the difference in the labor costs, the taxes, and the cost of doing business here and in the chief competitive nation.

Would you explain to the committee what you think we ought to do in that regard?

Mr. WORMSER. Senator, we looked into this question of what is a fair price to continue the program, and I sought the advice of friends in the industry.

Senator MALONE. So did we. But that is all right. Whom did you consult?

Mr. WORMSER. I consulted Mr. Bradley, for example. He was kind enough to send me a telegram.

Senator MALONE. Is Mr. Bradley producing tungsten now?

Mr. WORMSER. Yes, in Idaho. He in turn talked to others. He says:

> Have checked with several major western producers to ascertain price necessary to keep operations running at reasonable profit rate, and answer varies between $50 and $55 per short-ton unit. At $55 price Segerstrom estimates production as follows: First year 800,000 short-ton units; second year 700,000 short-ton units; third year 600,000 short-ton units. I believe at $50 figure production would be considerably lower.

Senator MALONE. The $55 price per unit results in a decreased production; does it not?

Mr. WORMSER. I took the average between the two as probably being the best way of reaching our objective of having a price——

Senator MALONE. He evidently said that the $55 price would substantially decrease production over the next 2 or 3 years; did he not?

Mr. WORMSER. If you consider it 1 million units now, he said down to 800,000, which is about a 20-percent cut.

Senator MALONE. Then he said 600,000 units; did he not?

Mr. WORMSER. In the third year. Our recommendation is only for 2 years.

Senator MALONE. It is now, but I am coming to that later. The $55 per unit price results in about what you say you would like to see, a gradual reduction, according to Segerstrom. I think he is an outstanding authority on tungsten. Read again what he said. He has siderable influence with me, because he followed his father in the tungsten business, and they know what it costs to stay in business.

Mr. WORMSER. "At $55 price Segerstrom estimates production as follows: First year 800,000 short-ton units; second year 700,000 short-ton units; third year 600,000 short-ton units."

That is still a large measure above what our domestic economy uses today.

Senator MALONE. Do you think you might come up with this plan from the Cabinet inside of 2 years?

Mr. WORMSER. I hope so.

Senator MALONE. It has been 2½ years now; hasn't it?

Mr. WORMSER. No, sir.

Senator MALONE. How long?

Mr. WORMSER. The President's statement was only about 6 or 8 months ago.

Senator MALONE. Yes; but you had been working on it before that; hadn't you?

Mr. WORMSER. We have given it thought in forging our Cabinet minerals policy.

Senator MALONE. Surely, what I would like to ask you is, Does it make very much difference whether we extend it a year or 2 years or 3 years in view of the fact that when you come in with a better plan it takes over anyway? So, it does not make much difference: does it?

Mr. WORMSER. No. As a matter of fact, you could really waive the time limit as far as that is concerned.

Senator MALONE. Why of course. However, the reason that they need a longer range plan is that in mining you can spend only what you can reasonably expect to amortize with a reasonable profit within the time of the guaranteed price; wouldn't that be right?

Mr. WORMSER. That is a consideration.

Senator MALONE. Isn't it all of the consideration? In other words, as an engineer, would you ask a client to put money in a mine which you could see would be unprofitable after 2 years if you could not amortize it in 2 years?

Mr. WORMSER. No.

Senator MALONE. Of course not. Then I presume from what you say it is your suggestion that after the committee weighs your testimony, Dr. Flemming's testimony, the testimony of Charlie Segerstrom, who was here and offered testimony, and any other testimony we might have, you would be satisfied with whatever price the committee might fix; would you not?

Mr. WORMSER. I think I would have to clear it with budget, of course, and see what the administration would go for.

Senator MALONE. We are acquainted, too, with the people there, and also with the administration We have met them.

Mr. WORMSER. I might be satisfied, but other members of the committee might not.

Senator MALONE. If we arrived at something that the committee thinks would keep these mines going, an interim plan as Dr. Flem-

ming called it, until you come in with your plan, would you be satisfied with our judgment now, between $52 and $55.

Mr. WORMSER. If at the same time it accomplished what I think is necessary to bring the industry down to a size what is commercial. The defense requirements are in addition to that.

Senator MALONE. Let's get back to the commercial ore. I thought we settled that. It is commercial ore and competitive with the world price as long as the price is fixed, or until the amount in this legislation has been furnished.

Mr. WORMSER. Or commercial requirements are now about half a million units per year.

Senator MALONE. I do not know what you would call commercial requirements. Are you talking about the amount of tungsten that is used in the commercial field?

Mr. WORMSER. That is right, our consumption.

Senator MALONE. You mean the American market. We know of course that in the absence of a duty which would take the profit out of the low-cost labor at the water's edge, no one in the consuming business is going to buy any domestic product at higher than the world price.

Mr. WORMSER. Not higher than the world price, of course not.

Senator MALONE. You cannot sell it at lower than the cost of production so the domestic producers are out of business. So what you are really saying when you talk about a competitive price or a commercial price is that the minute this runs out you are competing with the world price and the low-cost labor production; are you not?

Mr. WORMSER. What I am driving at, Senator, is to see that the industry gets down to a basis on which it can meet our commercial requirements. I think it has done a wonderful job to show what it can do in developing our resource. It deserves a lot of credit for that. It is a transition period that we are talking about now, and that transition is going to cause headaches. Somebody has to shut down to get on a commercial basis.

Senator MALONE. I have not seen any recommendation from you that the administration go back to that flexible duty which, as I have explained so many times here, makes up the difference between the cost of doing business in this country and in the chief competing nation, and in that event you would not need any special legislation. You are then competing for the American market, and you will not oversupply the American market because the least competitive producers will automatically be eliminated. That is the American way.

Mr. WORMSER. I think you and I are close together on that, Senator. My only thought is that this should be a transition program and that it will give us an interval to think over what is the best means of maintaining the industry. It may be tariffs.

Senator MALONE. A Government official, like myself, who has been in private business all his life should know, but after staying here a couple of years apparently commonsense leaves him.

All American producers want to do is to compete for the American market on a basis of fair and reasonable competition—that is all they want.

Every other nation in the world wants the American market, and that is what this is all about. As a Government official you are talking about the Government cutting down domestic production gradually,

when with all the economic factors involved in the operation it is impossible and only a Government official would propose it. You must have a principle, and you are not advocating a principle.

The CHAIRMAN. I should like to suggest that this is a very complicated matter, and I was wondering if it would be possible for Senator Malone to sit down with the witness in his office.

Senator MALONE. I certainly will sit down with him. We have him here now and he is on the record.

The difference in the price of a 20-pound unit of tungsten, between the world price and any guaranteed price to equal the difference in wages—it may be $12 per unit or whatever it is—you cannot find that difference in price in a jet engine. Tell me if you think you can.

Mr. WORMSER. Senator, minute or relatively small amounts of the high-cost metals are used in a jet engine. It is infinitesimal, really.

Senator MALONE. Or any place else.

Mr. WORMSER. As a matter of fact, that is why you have a wonderful opportunity to increase the market for tungsten, as I see it.

Senator MALONE. You don't have any opportunity to sell outside the United States of America, and you know that better than I do. We have priced ourselves out of the world markets through inflation.

Mr. WORMSER. I am talking about the domestic economy.

Senator MALONE. Then let our own producers compete on a basis of fair and reasonable competition in our own economy for the American market. That is all our people want. But you cannot do that with everything in charge of a Government official. You go into a long dissertation that you want something that is going to cut our producers down gradually. That is what is the matter with the Government today. We have a lot of people in Washington who, if they are here over 3 years, simply forget the producers and the taxpayers. I don't know why that is.

Now let us make a little more progress. As long as the price of the raw material does not mean anything in the cost of the end product—jet engines for example—are you satisfied with any price that this committee might fix between $52 and $55—you yourself?

Mr. WORMSER. I certainly would give it every consideration.

Senator MALONE. What do you mean by that? And how long will it take?

Mr. WORMSER. I personally would probably accept it, sir.

Senator MALONE. That is all I ask of you.

Mr. WORMSER. But I can't do it for the administration.

Senator MALONE. Let us worry about that. You would accept it?

Mr. WORMSER. I would accept it.

Senator MALONE. Mr. Flemming said he would accept it also as an interim program.

The CHAIRMAN. We are making progress here.

Senator MALONE. It took quite a while. I am sorry, Mr. Chairman.

Now let us get to the amounts. I think the amount you recommended in the letter to the chairman was 1 million units; was it not?

Mr. WORMSER. Yes, sir.

Senator MALONE. The Chairman, Senator Barrett, and I, and I am sure others, have conferred and have heard testimony, and we feel—I say "we" but I will speak only for myself, because we are going into executive session after we get through with your testi-

mony—we feel that perhaps 1 million units is not quite enough. I have discussed the matter with the proper people who suggest 1,250,000 might do the job. It might or might not be enough, but it would be a good start.

On the same basis would you personally be willing to accept the amount in units from 1,000,000 to 1,250,000 if this committee, after considering your testimony, Dr. Flemming's testimony yesterday, and all of the evidence we have before us, should arrive at that figure?

Mr. WORMSER. I certainly would not want to quibble about the amount that the committee decides in its own judgment it should be.

Senator MALONE. Personally you think it would be all right?

Mr. WORMSER. I would have no objection to it.

Senator MALONE. Fine.

Now we come to limiting certain companies or producers in the amount of units per month. I want to give you some of the evidence that we have had and perhaps some of the background of experience that we have had watching it for 35 years, as you have. If you put a limit on it, you do two things. First, prospectors have been back in the field under the 1953 Malone-Aspinall Act because they felt that Congress, after we found that we had tungsten in the United States, would not lack the judgment necessary to adopt a principle under which our producers could compete for their own American market. You see, for 20 years the people of this country were sold that there was no tungsten in the United States. Mr. Ickes, a Secretary of the Interior, had that pretty well sold. He died thinking we did not have any tungsten. I am sorry about that. Some of us told him that we had a century's supply of tungsten, but he would not believe us.

Since our producers have proven amply that they can produce all the commercial tungsten that the commercial users can use in this Nation at a price enough above the world price to make up the difference between the cost of doing business here and in the chief competing nation, you do two things:

The prospector then, if Congress will act, will return to the field if he can sell the tungsten he finds. The second thing is most of these mills—and there are only 4 or 5 of them—are custom mills; that is, they run what they produce and buy additional ore from the small producers. There are about 700 of these producers. We would keep these small producers alive.

Before you can have small mines you must have prospects, and before you can have big mines you must have small mines.

If you limit the sale from these mills you would take the prospectors out of the hills immediately, because the first thing the mill owners would do would be to cut off the small miners and mill their own tungsten.

I think you would agree with those two statements as a premise, and with that background why do you suggest in your letter to the chairman that there be a limit of 5,000 units per month?

Mr. WORMSER. We did not suggest that.

Senator MALONE. I am sorry. It was in a proposed bill. I thought that you suggested it.

Mr. WORMSER. No. You and I conferred about it, but I accepted your judgment on that.

Senator MALONE. Then would you accept the judgment of the committee, after they consider all the evidence, including your own, in any limit they set or no limit if their judgment dictated that condition?

Mr. WORMSER. Definitely, but may I just say——

Senator MALONE. You would accept it.

Mr. WORMSER. I would accept it, Senator, but my reason for suggesting a limit at the time I explored it with you, sir, was a desire to keep as many small producers in business as possible, not to have the benefit of the program go to the larger producers.

Senator MALONE. Any limit puts them out of production first. If you owned a custom mill, you would keep your own mine running and cut out the small producer first. You would say to the little fellow who came up with his truckload, "I am sorry, but this is your last," wouldn't you?

Mr. WORMSER. Probably.

Senator MALONE. That is the case. I have one more question, Mr. Chairman, and then I think we will have made some real progress.

The CHAIRMAN. You are doing very well, Senator, and I congratulate you on your progress.

Senator MALONE. I know the background of this witness, and I know he is inherently right in his reactions. It is just a question of our thoroughly understanding each other.

The CHAIRMAN. That is right.

Senator MALONE. Do you think definitely that the Cabinet will come up with a plan to keep the mining industry a going concern within the reasonably near future, perhaps a year?

Mr. WORMSER. This gives us a breather definitely, Senator. I am very hopeful of it.

Senator MALONE. You really believe you will.

Mr. WORMSER. I do.

Senator MALONE. Then does it make any particular difference to you where we fix the cutoff date in the bill since if you come up with a reasonable bill plan it would take over? Whether we make this bill 1 year, 2 years, or 2½ years, it would not make much difference because we are ready to accept a feasible plan when you come up with it.

But we would like to include enough time so that the prospectors will keep on tramping the hills with that little light turning it on the rocks to locate tungsten.

I never did know of an engineer finding a mine. They turn them down, they do not discover them. You talk about the USGS finding mines. I never knew them to find one yet. I have known them to claim they did, but generally they are looking for something else and run into tungsten accidentally, as they did up in Idaho. They make some great surveys, but they go in only after there is enough mineral found to make the survey necessary.

For several reasons an engineer cannot take a chance on a prospect. It is the prospector who finds the prospects which may turn into mines.

The CHAIRMAN. I used to hear the expression that an engineer can't see any further through the ground than an ordinary miner.

Senator MALONE. Not only that, he has a reputation to maintain, and the prospector does not. If the prospector hits 1 out of 5,000 and he can still eat, he is made. If an engineer makes 2 mistakes out of 3 tries, he is through. So he has to be conservative. So it is silly

to tell the American people that engineers find mines. They turn them down. You can understand why.

Would you be satisfied with any reasonable limit; instead of saying June 30 next year or the year after, that we might make up our minds, speaking for myself, that it should be maybe the end of 1958? We really ought to have a 5-year extension. That is the way I introduced my bill, extending the Malone-Aspinall Act for 5 years. Talking for myself now, not speaking for any other member of the committee, I am willing to depend on your judgment that your Cabinet Committee will come up with something. If we made this 2½ years, say to the end of 1958, with the understanding that you are coming up with a plan which would replace the act; would you object?

Mr. WORMSER. I have no objection.

Senator MALONE. I am through, Mr. Chairman. I think Mr. Wormser has turned into a fine witness here. I congratulate him.

The CHAIRMAN. We appreciate your assistance, Senator Malone.

Senator BIBLE. Mr. Chairman, I want to compliment Mr. Wormser, as I did Dr. Flemming yesterday, for coming up with a report that is easily understood and clear.

Senator MALONE. I join with my colleague.

Senator BIBLE. I think now we understand ABCD what you are saying, and I think you are to be complimented on the very fine report that you have made here.

Mr. WORMSER. Thank you.

Senator BIBLE. I think my senior colleague has very adequately and effectively covered the tungsten field. I don't know that I have anything to add on that particular phase of it. I do note—and possibly this is the proper place to bring it into the record—that you likewise recommend the transition period continuation of the asbestos program.

Mr. WORMSER. We do, sir.

Senator BIBLE. I don't know that you have made any specific recommendations on that particular point.

Mr. WORMSER. We have.

Senator BIBLE. I think the record should show that as well.

Mr. WORMSER. The Department's letter I believe has already been introduced into the record.

Senator MALONE. If you will allow me to interpose there——

Senator BIBLE. Surely.

Senator MALONE. Would you take the same attitude on the asbestos program that you have very consistently taken on tungsten, and that is after considering your testimony and Dr. Flemming's and all of the record that we have made, whatever we come up with to last until your Cabinet Committee can come in, would be all right with you?

Mr. WORMSER. Yes.

The CHAIRMAN. Senator Allott, of Colorado, has just joined us this morning, and I believe he has a statement he would like to make.

Senator ALLOTT. It is not a statement, Mr. Chairman, but I would appreciate the opportunity of asking Mr. Wormser a few questions if the committee will bear with me. I am sorry that I have not been able to be here yesterday, and this morning, but I have had to leave one of my own committees in order to be here at this time.

Mr. Wormser, in Dr. Flemming's statement yesterday on page 10 under item J he enumerated three points with respect to fluorspar. He made the point that the amount on hand exceeds the minimum and long-term stockpile objectives. He also made the point that the Government does not have any purchase program a premium prices for acid-grade fluorspar. He made the point that the Congress should take, and I am quoting:

> appropriate action to assist the industry by providing for purchases of specified amounts from nondefense funds until Congress has had time to consider recommendations from the Department of the Interior for a long-term program.

That is the end of that quote from Dr. Flemming's statement.

The situation in my own State is due partially, of course, to the importation of fluorspar produced in mills built by United States money in Mexico. Our fluorspar people are in a very critical situation, and in all probability, based upon the present situation, will be required to shut down about the first of August of this year, which is just about 65 days away.

In your statement on page 2 you say:

> Among those commodities with reference to which the Office of Defense Mobilization has stated that further purchases cannot be justified from a defense standpoint, are tungsten and asbestos. We recommend, nevertheless, that special provisions be made by the Congress to continue purchases of these commodities for a limited period.

That is the end of your quotation.

What I would like to know is, in omitting fluorspar and not joining in the direct statement of Dr. Flemming, have you departed from his statement purposely or do you join in his recommendations with respect to fluorspar?

Mr. WORMSER. Senator, we had no fluorspar bill before us when the Department commented. Flourspar was just brought up yesterday by Dr. Flemming. As I understand it, he still can take care of the fluorspar situation under his own defense powers.

Senator ALLOTT. You say he can or can't?

Mr. WORMSER. I believe he can. I believe it is his desire to refer the fluorspar situation to us, to the OMM, for analysis and to come back to him with a suggestion. But so far as I know he has not yet asked us for a suggestion.

Senator ALLOTT. Aren't you speaking about metallurgical fluorspar?

Mr. WORMSER. Suppose I ask Mr. Liebert to answer that, because he is more familiar with that situation. I have not had a chance to explore it.

Mr. JOHN G. LIEBERT (special assistant to the Assistant Secretary for Mineral Resources, Department of the Interior). I think you are right, Senator. Mr. Wormser was talking about metallurgical-grade fluorspar. His remarks were directed to that commodity. Acid-grade fluorspar is the commodity which Dr. Flemming referred to as having filled both the long-term and short-term objectives. You do have a situation in which Dr. Flemming has said we have developed some industry in acid-grade fluorspar and the question now is, what do we do to assist that industry at this time? He did not feel it was any longer a defense program, but that it was a problem to be considered by Congress along with tungsten and asbestos.

Senator ALLOTT. The situation which exists with respect to the acid fluorspar production, as with any other mine, is that if you close them down you lose your workmen and you lose your value. There is depreciation. We have two mines in Colorado alone that produce about 100 tons a day, one at Jamestown and one at Walden, called the North Gate. Those industries will be paralyzed and forced to shut down in 60 days.

We have the situation of one of our big companies in the United States selling tungsten to the Government at $63 and going out on the world market and purchasing the tungsten at around $42 or $43 and using it in its own manufacturing processes.

What is the Department of the Interior going to do about that?

Mr. WORMSER. Senator, I think we will have to study it very carefully and, if it is your wish, come up with some suggestions which will continue the industry over the transition period at any rate, until we can come forth with some long-term answer.

Senator ALLOTT. Let me ask this. Have you ever come up with recommendations to stop this vicious practice—I use that term advisedly—of permitting a company to sell its own production of minerals to the Government at a souped up price and to go out on the world market and buy $25 cheaper for its own industrial capacity and use?

Mr. WORMSER. We have made no recommendation at all in that connection. In fact, heretofore that development of which you speak has been entirely a defense situation. As a matter of fact, it occurs right now in tungsten.

Senator ALLOTT. Don't you think it is about high time that we did something about this and that the Department make recommendations about it?

Mr. WORMSER. I think it is a rather serious situation; yes, sir. I am disturbed about it, quite frankly.

Senator ALLOTT. I don't want to name the company here because I might be picking on one company when there are two dozen that are just as guilty, but if company A produces tungsten and also uses tungsten, there is no justification that I can see for permitting that company to produce tungsten to sell to the Government at $63 and then go out on the world market and buy it $20 cheaper. Can you justify that in your mind?

Mr. WORMSER. I certainly cannot justify it, Senator. You have that situation in tungsten.

Senator ALLOTT. To get back to this situation, I want to make it perfectly clear. You say you will have to work out some program if that is our wish. I want to make it perfectly clear that certainly for our Colorado miners, and I think I am speaking for our Illinois people, too——

Senator MALONE. And Kentucky.

Mr. WORMSER. And New Mexico.

Senator ALLOTT. Who produce fluorspar—I know that is their wish. I want to make the record clear that we feel that these industries have to be sustained. There isn't any place that the program has worked backward worse than this. It is not just a matter of saying that you have so much consumption and that because of our international situation we must let these people produce some so they can lift themselves up by their own bootstraps. Here we are actually enabling

certain companies, in addition to that, to make an unfair profit off the Government on what they themselves are producing.

It seems to me that the Department should look at that. You say they have done it in tungsten. It seems to me that we should have specific legislation directed to that area to prevent that occurrence. Do you agree with that?

Mr. WORMSER. I would agree to that, sir. It appalls me, too, to see this situation, but I have not interposed any objection because it has been a defense measure.

Senator MALONE. I might say to the Senator from Colorado that he is on the right track, and it is high time that the Congress itself regained its constitutional responsibility to regulate our foreign trade and national economy. The way they killed the fluorspar business in this country is stated in our testimony of 10 volumes behind this report, and I would like to send it to the Senator so he can have it. We had a certain duty on fluorspar. We had a higher duty on low grade, a lower duty on high grade. The people in the business are smarter than Congress. We mine on the Senate floor just like we farm. We don't understand the effect of what we do while the people who advocate the legislation do know. So down in Mexico, the people being a little smarter than Congress and the State Department, beneficiated the low-grade fluorspar into a higher grade which took the lower tariff, and then after importing it here they mixed the higher grade ore with lower grade and used it. They are now doing that, and have shut down the mines in Illinois and Kentucky and will shut them down in Colorado if they are not already shut down, simply with low-cost Mexican labor.

So, the Senator is on the right track, and I would like to discuss it with him later when we have more time.

Senator ALLOTT. I would appreciate the opportunity.

Now let me get this straight as to your intention, Mr. Wormser. I am sure that all of us have appreciated the great effort you have made, now that we are getting out of this defense stockpile program, to adjust our production and do something for it. Is it your intention at the present time to come up with a program which will enable our local domestic acid grade fluorspar mines to survive, realizing that they have less thn 60 days of life left?

Mr. WORMSER. Certainly we are concerned with a problem as serious as that, Senator. I am sorry it has not been brought to my attention prior to this meeting here. I would be delighted to give it every attention and see what we can come up with, if that will assist the Congress.

Senator ALLOTT. Do you mean to say that this fluorspar situation——

Mr. WORMSER. I was referring particularly to the bills. We devote our attention to the bills which were put before us, and I have not prepared myself on fluorspar. We have people here, I believe, who know the fluorspar industry backward and forward. I should just like to refresh myself and see what we can do. I don't want to give you a snap judgment on what we might do.

Senator ALLOTT. Can I ask that you advise with these people who are far greater authorities on fluorspar than I am and than you are and advise me as to what your plans are within the next week so we can take adequate steps to protect our producers?

Mr. WORMSER. I shall be very glad to, Senator.

Senator ALLOTT. I appreciate that very much. Thank you, Mr. Chairman, very much for this opportunity to participate.

The CHAIRMAN. Senator Goldwater, do you care to ask some questions?

Senator GOLDWATER. Mr. Chairman, the junior Senator from Nevada complimented Mr. Wormser on his statement and remarked as to its clarity. I agree pretty much in general with that statement, but there is one point on which I should like to question Mr. Wormser.

Senator MALONE. I was talking about the cross-examination.

Senator GOLDWATER. I was talking about the junior Senator, too.

On the first page of your report on S. 3379 you say:

> At the present time, domestic production of this commodity is running at the rate of about 1 million units per year.

Then on the last page of your report you say in part:

> We suggest that consideration be given in that event to a purchase program for a period of not more than 2 years, with purchases being limited to a total quantity of 1 million units and at a price of not to exceed $52.50 per unit. The quantities which could be delivered to the Government from any one mine should be limited in order to keep in being the broadest base of production. The specifications for the material can remain the same as those currently in effect.

That amounts to 500,000 units a year for 2 years, and we are currently producing at the rate of 1 million units. Can you give me any idea of how many small people will drop out of this production if this recommendation is followed?

Mr. WORMSER. I don't think I can give you any analysis of that, Senator. I can tell you about how many people there are producing.

Senator GOLDWATER. That would be of value.

Mr. WORMSER. I think that might help to give us an answer. Currently the number of producing operations that we have a record of is roughly 700. Nevada is the leading State, followed by California, North Carolina, Montana, Idaho, Arizona, Washington, and Colorado.

Senator GOLDWATER. Don't you agree that if we cut our production——

Mr. WORMSER. In half, roughly.

Senator GOLDWATER. By law in half, there is going to be a substantial number of those 700 out of business?

Mr. WORMSER. Oh, definitely.

Senator GOLDWATER. Could you go further in your consideration, because I am sure Congress does not want to be shouldered with this responsibility, and recommend how we cut them out? Which little fellow do we stop producing tungsten?

Mr. WORMSER. That is the difficulty when you use this approach. Ordinarily this program would terminate as of the next month, and the only people who would survive would be those who could meet the competitive international situation. It might be only half a dozen producers. I don't know how many. In a free competitive market that would obtain, but we are endeavoring to have a transition period which would bring down this overproduction to the commercial requirements of the country, which are 500,000 units a year. Somebody has to give. I don't know who it will be.

Senator GOLDWATER. You do recognize, then, that in this suggestion of yours a substantial number of these 700 will be hurt.

Mr. WORMSER. Definitely.

Senator GOLDWATER. I just wanted to make that clear as coming from you, because I didn't want the small tungsten miners to be mad at Congress. I want them to be mad at you.

Senator BIBLE. Mr. Wormser, isn't part of the control though, on the question that Senator Goldwater asks, in the price as well as the quantity? Isn't that part of the control?

Mr. WORMSER. The Congress will have to decide. If it is in your judgment desirable to keep these 700 producers in business and to turn out 1 million units of tungsten when the market can take only 500,000, it certainy is the privilege of the Congress, but it does not make sense to me to see this gigantic overproduction in peacetime. For defense and for our stockpile I can see it, but for commercial requirements it just does not make sense.

Senator GOLDWATER. Just one more point on that. What would your suggestion be as the top limit for the fellows who are left in this business?

Mr. WORMSER. I don't understand what you mean by top limit, Senator.

Senator GOLDWATER. You suggest that the quantities which could be delivered to the Government from any one mine should be limited. What would that be? Would you divide the number that are left in operation into the 500,000?

Mr. WORMSER. The thought I had in mind—and I talked to my friend, Senator Malone, here—was to put some limit of 5,000 units per month or 15,000 or 2,000 or whatever in the judgment of the committee would spread the base of production as far as possible. That would prevent, as I thought at any rate, the larger mills from taking over the market and leaving the little fellows to survive. I was persuaded by Senator Malone that it may be desirable not to put a limit in. I will toss that back to the committee as to what course it wishes to follow.

Senaor GOLDWATER. We don't want to accept that ball without your blowing it up as tight as it can be. I think as long as you have recommended limits, you should be able to give some idea as to what those limits should be, whether it is 2,000, 4,000, or 5,000.

Mr. WORMSER. We originally had the idea of 5,000 units as the appropriate figure.

Senator GOLDWATER. 5,000 units per month?

Mr. WORMSER. Per month; yes, sir.

Senator GOLDWATER. Do you still make that recommendation?

Mr. WORMSER. We did not incorporate it in our letter to the committee, Senator.

Senator GOLDWATER. No, but you have language of limitation in there, and I thought possibly you wanted to be on record with some limit.

Mr. WORMSER. I don't want to quibble, whether you want to make it 5,000 or 1,000. We will accept any limitation that the committee deems appropriate.

Senator GOLDWATER. All right. That is all I have, Mr. Chairman.

The CHAIRMAN. Senator Case, do you desire to ask any questions?

Senator CASE. Mr. Chairman, I have been very much interested in the testimony as I have heard it developed this morning and as I did on a previous occasion when I had the privilege of attending one of

your hearings on this subject. There are two questions I should like to ask.

First of all, the other morning when I was here attention was called to the directive which the Defense Department had issued to procurers of airplane engines and others that established criteria for the amount of tungsten and certain other critical materials that might be used per unit. I understand that about a week or 10 days after you developed that testimony, that criteria was modified and changed. I am wondering whether or not these new estimates as to the amount of tungsten that might appropriately be in the stockpile, which were given by Dr. Flemming yesterday or indicated by Mr. Wormser today, whether these new estimates as to the defense requirements have been modified or adjusted in the light of the modification of the defense criteria order.

Mr. WORMSER. Senator, I think the answer to that will probably materialize over quite a period of time. Those changes are not made overnight. Perhaps you won't see the benefit of that for months or possibly a year or so.

Senator CASE. I note in your statement on page 2 you call attention to the fact that the Director has indicated that ODM will authorize continued purchases of certain materials where the stockpiles are inadequate for mobilization purposes. Then you say:

> As to others, however, the Director of the Office of Defense Mobilization has stated that additional supplies are not needed for defense purposes, and that continuing purchases beyond those already scheduled cannot be justified under the Defense Production Act.

It has been my understanding that the amount of tungsten and certain other materials that are used in certain types of jet engines created a limitation upon the performance of those engines and that since it has been indicated that more of these materials might be available, that the Defense Department was raising the tolerance for the amount of these critical materials that could be used in order to take advantage of the increased supply and thereby increase the performance of these engines. If that is true, should not the ODM in turn recommend continuing purchases beyond those already scheduled?

Mr. WORMSER. Let me say, first of all, that is a hope fervently to be desired. If they will design more tungsten into their planes or armaments, engines and whatnot, that will help the domestic mining industry terrifically. It will certainly strengthen the market for tungsten. But so far as ODM's position is concerned, they are of course anxious to get a stockpile, and they have that stockpile now. So I don't think it would affect the acquisition of the tungsten that they need for the mobilization picture.

Senator CASE. Is it not true, Mr. Chairman, that following the session where you had the defense order brought to your attention for that material, there was a modification of that material?

Mr. REDWINE. It was increased by approximately 25 percent. Senator Case, if I may, I would like to read to you from the testimony of Dr. Flemming yesterday in that respect. He was asked about the very thing that you were talking about. [Reading:]

> Now, if these so-called conservation orders are operating in somewhat the same way that they do on tungsten, we would certainly be willing to take a look at the situation with Defense and see whether or not the requirements information is as sound as it should be. If, in figuring their requirements they have

also taken into consideration their conservation orders, why, then it is altogether possible that the requirements figure is too low. If it is, we can take another look at it from the standpoint of defense.

Later on in his testimony Dr. Flemming said he would take another look at the overall situation and that it was logical to assume that there might be an increase in the use of tungsten in military aircraft.

Senator CASE. Mr. Chairman, I am glad to know about that. It seems to me if that is true, then it might modify some of the conclusions or testimony submitted by Mr. Wormser today.

The second question that I wanted to ask had relation to the supplemental stockpile acquired through the disposal of agricultural surpluses. In the early part of your statement, Mr. Wormser, you referred to the fact that the mineral resources or mineral deposits of this country were getting leaner, as they are of the world, where you exploit them. I know there is some difference of opinion about that if you are thinking in terms of the known reserves, because frequently the exploration and development of a mine indicate that we have more reserves than we thought we had some years before.

Mr. WORMSER. I hope I did not create the impression that we are exhausting all our potential mineral possibilities, because we definitely are not. I am not a subscriber to the "have not" theory of our mineral resources.

Senator CASE. In connection with your observation that "one thing is unmistakably clear, namely, that our mineral resources are growing leaner," do you not think it is desirable that we do convert perishable surpluses, such as the agricultural commodities, into the storable minerals where we have a short natural supply?

Mr. WORMSER. I think it is a very advantageous program. I don't see how we can miss by acquiring these limited natural metals and minerals and storing them for the future, keeping them off the market and at the same time helping the metals picture where some barter transaction might lift the whole international market. It makes sense to me.

Senator CASE. I think it does, and I just wanted to ask, are the laws adequate to insure that these supplies thus acquired by barter for agricultural surpluses are kept off the market?

Mr. WORMSER. That worried me at the time, Senator. In the recent farm legislation I wanted to make certain that security or that stipulation would be in the law. As I understand it, although I have not read the latest farm bill, there is a provision in it which would lock up these accumulations just as tightly as the military stockpile under Public Law 520.

Senator CASE. Mr. Chairman, I would like to suggest that Mr. Wormser take a look at that in the phraseology of the bill as it has now gone to the President, and if at any time he feels the language is not tight enough to lock up these minerals so they are preserved for times of emergency, that he communicate with some of us so we can take appropriate steps.

Mr. WORMSER. Thank you for that opportunity, Mr. Chairman. I shall appreciate that very much. I shall be delighted to do so.

The CHAIRMAN. Very well.

Mr. REDWINE. Mr. Chairman, I think Senator Case will be interested in this additional testimony given yesterday by Dr. Flemming. In answer to a question from Senator Malone he said:

Staying with tungsten, very frankly I cannot see any justification at the present time for such an order, because it seems to me whatever requirements Defense may have in connection with current production or whatever requirements they feel that they might have in event of mobilization can be met.

In other words, he recommended the taking of all restrictions off the use of tungsten by the Defense Department.

Senator CASE. In that case it might make quite a bit of difference in the amount of tungsten that you could encourage to be produced in this country. Thank you very much, Mr. Chairman.

The CHAIRMAN. Senator Barrett?

Senator BARRETT. Secretary Wormser, I should like to ask you a couple of questions. First, are there any restrictions that you know of at the present time on the use of tungsten, the amount that might be used?

Mr. WORMSER. Senator Barrett, I think the military restriction is about the only one now.

Senator BARRETT. Secretary Quarles was testifying here yesterday, and I believe he indicated that the effect of the orders was really not restrictive; that, after all, if they could come in and show that they needed to use more tungsten per 1,000 pounds of thrust, they could get the order if they made a good showing. As I took it, there was no request for additional amounts.

I was just wondering if that is the fact or if industry is restricted in its use of tungsten at the present time.

Mr. WORMSER. From the defense standpoint, of course.

Senator BARRETT. Yes, from the defense standpoint.

Mr. WORMSER. I am not too certain about that. I have not read Secretary Quarles' testimony, but if he has opened the door, as he apparently has, if there has been a door locked, it looks to me as if there is an opportunity for the tungsten industry to sell its merchandise over there if it convinces the Department it has something which may be superior to or an improvement on what it is now using, and perhaps get the Department to use more of it.

Senator MALONE. You were not here, Senator. Secretary Quarles testified that they had restricted the use. You heard that testimony?

Senator BARRETT. Yes, I heard that testimony. He said he had issued a new order last month and, as I took his testimony, he tried to make it quite clear that even the previous order was not in fact restrictive because of the opportunity to come in and make a showing that they needed to use more, and if such a showing was made he indicated that it would be granted.

In the light of the fact that production here is running at 1 million units and consumption only 500,000 units a year, it would seem to me there is no justification for a position of that type.

I was interested in your ideas about a permanent solution to this matter. It strikes me that there is quite a problem here if our demand is going to remain relatively about the same as it is at the present time with relation to our production. We have a considerable problem as far as a permanent solution is concerned.

Mr. WORMSER. We certainly have, because the hope is that enough new uses or expansion of existing uses will be found to enable the domestic tungsten mining industry to go ahead full speed, but it is not right now with the consumption around 500,000 units and 1 million units being produced.

Senator BARRETT. A tariff would not be effective and an import quota would not be effective here because you just do not have it.

There is one other question I was concerned about, and that is the matter of the amount which would be necessary in order to keep these mines in operation. I can see here that they are producing 1 million units a year, but could they all be kept open on less production than that?

Mr. WORMSER. This program that we have suggested will undoubtedly cut down the production, because the $63 unit price will be reduced, as we have recommended, to $52.50, and that will undoubtedly curb production. I don't know who will be hurt and who will be able to survive.

Senator BARRETT. The point I was driving at is this: Would 700,000 units, say, make it economically possible for all of these producers to keep their doors open and to operate?

Mr. WORMSER. I doubt it, Senator. I don't think so.

Senator BARRETT. It is not a question of over production there, where they can cut back to a certain standard?

Mr. WORMSER. If everybody in the industry reduced his production, theoretically of course they could bring it down to 500,000 or 700,000 units.

Senator BARRETT. I mean economically.

Mr. WORMSER. Economically. That is the rub, of course.

Senator BARRETT. It is quite a problem. I want to congratulate the Secretary on his fine work on this problem, Mr. Chairman, and on other related problems. I know he is very sympathetic with the situation that the industry finds itself in at the present time, and I am hoping that we can work out something that will keep the industry in a position to produce, provided the demand increases in this country at a reasonably early date.

Do you have any idea yourself which would justify you in making a prediction of things to come?

Mr. WORMSER. I am quite optimistic, Senator. I think with the tendency to high temperatures in our air structures, and so forth, there will be a distinct spot for tungsten and some of the newer metals which we are learning about. If I were in tungsten mining I would be quite optimistic about it.

Senator BARRETT. It would be definitely in the public interest to try to take care of this transition period.

Mr. WORMSER. Right. That is my feeling exactly, Senator.

The CHAIRMAN. I believe Senator Allott would like to ask another question.

Senator ALLOTT. I have one question, Mr. Chairman.

With respect to the last paragraph of Mr. Flemming's statement I would like to know whether or not you agree with that recommendation. Do you have it before you?

Mr. WORMSER. I think I have it now.

Senator ALLOTT. That is paragraph VI B.

Mr. WORMSER. I would agree to that, yes, sir.

Senator ALLOTT. Then I would like to make the statement, Mr. Chairman, that although my questions of course ran primarily to fluorspar, we in Colorado are just as much interested in the other critical minerals such as tungsten and manganese which have been discussed so much here. I would not want the committee to think

that my questions on one score evidenced an interest only in that mineral. We have great production of many minerals in Colorado, as you know. I felt I could add very little to the tungsten discussion after what had occurred here. Thank you very much.

Senator MALONE. I have one question I would like to ask the Secretary.

The CHAIRMAN. Proceed.

Senator MALONE. Are you aware that there are outstanding contracts from foreign countries at $55 a ton which amount to more than a million units where the wages are less than one-tenth of our own?

Mr. WORMSER. My understanding, Senator, is that there are contracts of that nature that were negotiated some years ago. I have forgotten how long ago, 5 or 6 years ago.

Senator MALONE. One contract is for 550,000 units and another for 710,000 units at $55 a unit. This tungsten is produced in South Africa and other areas where there are very low wages, so there is a tremendous profit in it. We are not blaming anyone for making these contracts, because I presume they were made when they still believed the 20-year propaganda that we had no tungsten in this country, but as long as we are paying $55 per 20-pound unit to these same people who are making a good profit at $43, the world price, Mr. Chairman, I should not think there would be too much objection to fixing a reasonable price of $55 per unit for our domestic producers where the wage-standard of living is many times greater, for our domestic producers.

The CHAIRMAN. Does that conclude your questions, Senator?

Senator MALONE. Yes.

The CHAIRMAN. The hearing will end at this time——

Senator BIBLE. Mr. Chairman, may I interrupt before you officially close the hearing just to ask that there be inserted in the record a letter and a table which I have received from one of our tungsten producers which I think is rather significant. I want to read just the first paragraph:

> With regard to the termination of the domestic tungsten purchase program, I am furnishing you with some interesting figures which indicate that the Federal Government is not paying domestic tungsten producers over $40 per short ton unit after considering the return by taxes amounting to approximately $25 per short ton unit.

I think that is signficant. He has broken it down on last year's program to show, for example, that the Federal income taxes paid last year with the other taxes amount, as he says, to approximately $25 per short ton unit. I think it is very helpful to the committee.

Senator MALONE. I think it would be well to put the table in the record. I think you have a very important point. You remember that we discussed that yesterday.

Senator BIBLE. That is correct. I think it indicates that these producers do pay back approximately 1 to 4 or even more than that in taxes to the Federal Government.

Senator MALONE. While the foreign producer does not pay any taxes.

Senator BIBLE. He pays nothing at all, that is true. I ask that that be incorporated at this point in the record.

The CHAIRMAN. Very well. The material will be incorporated in the record at this point, as requested by the Senator.

(The document referred to follows:)

		Per short ton unit
Actual amount paid by General Services Administration for 66,818 short ton units delivered in 1955	$4,190,680	
Less:		
Federal income-tax for 1955	639,946	
Withholding taxes from employees wages	121,333	
Federal Insurance Compensation Act (FICA)	36,639	
Federal unemployment insurance	2,548	
Estimated Federal income tax paid by stockholders receiving $300,000 in dividends	75,000	
Estimated Federal income tax paid by 25 custom ore accounts shipping ore to Getchell mine	50,000	
	924,566	
Divided by 66,818 short ton units	3,266,114	$48.88
Less:		
Nevada unemployment insurance	12,675	
Nevada sales and use taxes	22,025	
Nevada net proceeds of mines tax	22,342	
Nevada industrial insurance	58,081	
	115,123	
Divided by 66,818 short ton units	3,150,991	47.15
Less:		
Estimated Federal income tax on profits of business houses derived from purchases of supplies totaling $1,101,234, including 3 percent Federal transportation tax	220,024	
Estimated Federal income tax on profits derived from the spending of wages totaling $1,082,828	200,000	
	420,024	
Divided by 66,818 short ton units	2,730,967	40.87

NOTE.—If it were possible to calculate the amount of hidden taxes the cost to the Federal Government per short-ton unit would be even less than $40 per short ton unit.

The above figures are for year 1955 only and do not cover the duration of the domestic tungsten purchase program.

GETCHELL MINE, INC.,
Reno, Nev., May 18, 1956.

Hon. ALAN BIBLE,
Senate Office Building,
Washington, D. C.

DEAR SENATOR BIBLE: With regard to the termination of the domestic tungsten purchase program, I am furnishing you with some interesting figures which indicate that the Federal Government is not paying domestic tungsten producers over $40 per short ton unit after considering the return by taxes amounting to approximately $25 per short ton unit.

Should the Federal Government accumulate a stockpile of tungsten amounting to many million more short ton units than the 3 million now in Federal warehouses, no loss to American taxpayers would result from such accumulation as tungsten is not perishable and the surplus over that used for defense purposes could be sold to domestic users for a comparable price now paid for imported tungsten. Therefore, the reestablishment of a domestic tungsten purchase program could not be construed as a "raid on the United States Treasury."

You are aware of the serious results to the people of the Western States, and in particular Nevada, caused by the termination of the domestic tungsten purchase program. Practically residents of every city and town in Nevada will be seriously affected if Congress fails to enact legislation toward the continuance

of the domestic tungsten purchase program. Over 5,000 people (workmen and their families) will be thrown out of employment. Many Nevada towns benefit largely by the payrolls of tungsten mines and mills as well as sale of supplies not only to the operators but to employees as well. Getchell Mine, Inc., purchased $1,101,234 in supplies mainly in Nevada. Railroads and trucklines will also be seriously affected by the loss of revenue received from hauling ore, concentrates, and supplies.

Getchell Mine, Inc., have been purchasing ore from over 25 small Nevada mines who cannot afford to build mills of their own. These mines will shut down and in most instances this shutdown will be permanent due to lack of funds to prevent caveins and flooding. The cost to larger operators to resume mining and milling will be prohibitive as most of the machinery will be dismantled and the mines will not be maintained, therefore difficult and expensive to reopen.

It is not an exaggeration to state that the failure of Congress to enact suitable legislation will be a death blow to Nevada tungsten mining which for the past 10 years has been one of Nevada's outstanding industries.

Kindest regards,

GEO. WINGFIELD.

Senator MALONE. Mr. Chairman, I would like to ask that S. 2876 be inserted at this point since it is a very short bill, simply to extend the 1953 Malone-Aspinall Act as it is now operating. That bill was introduced by me earlier in the year.

The CHAIRMAN. That will be carried in the record at this point.

(S. 2876 and the report of the Department of the Interior on S. 2876 follow:)

[S. 2876, 84th Cong., 2d sess.]

A BILL To amend the Domestic Minerals Program Extension Act of 1953 in order to strengthen the national defense and to further extend the program to encourage the discovery, development, and production of certain domestic minerals

Be it enacted by the Senate and House of Reprsentatives of the United States of America in Congress assembled, That this Act may be cited as the "Domestic Minerals Program Extension Act of 1956".

SEC. 2. Section 3 of the Domestic Minerals Program Extension Act of 1953 (67 Stat. 417) is amended to read as follows:

"SEC. 3. In accordance with the declaration of policy set forth in section 2 of this Act, the termination dates of all purchase programs designed to stimulate the domestic production of tungsten, manganese, chromite, mica, asbestos, beryl, and columbium-tantalum-bearing ores and concentrates and established by regulations issued pursuant to the Defense Production Act of 1950, as amended, shall each be extended (1) an additional five years beyond the termination date of such program under the extension provided for in accordance with the provisions of this Act prior to its amendment by the Domestic Minerals Program Extension Act of 1956, or (2) until such time prior to the termination of such five-year extension if and when there have been purchases under such extension equal in quantity to the purchases under such program prior to its extension under such Act of 1956: *Provided*, That this section is not intended and shall not be construed to limit or restrict the regulatory agencies from increasing the quantity of materials that may be delivered and accepted under such program as permitted by existing statutory authority: *Provided further*, That the extended termination date provided by this section for such critical materials purchase program shall not apply to the purchase of ores and concentrates of foreign origin."

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., May 21, 1956.

Hon. JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
United States Senate, Washington, D. C.

MY DEAR SENATOR MURRAY: This responds to your request for the views of this Department on S. 2876, a bill to amend the Domestic Minerals Program Extension Act of 1953 in order to strengthen the national defense and to further

extend the program to encourage the discovery, development, and production of certain domestic minerals.

We recommend that the bill not be enacted.

S. 2876 would amend the Domestic Minerals Program Extension Act of 1953 (Public Law 206, 83d Cong.; 67 Stat. 417) by extending the termination dates of Government programs to purchase tungsten, manganese, chromite, mica, asbestos, beryl, and columbium-tantalum bearing ores and concentrates of domestic origin (1) 5 years beyond the currently scheduled termination dates of such programs or (2) until purchases under the proposed extension equal the quantities acquired prior to the enactment of the proposed extension, whichever shall first occur.

These programs were established pursuant to the Defense Production Act of 1950 during the Korean hostilities, and they were extended for 2 additional years by Public Law 206 of the 83d Congress. S. 2876 would direct the expansion and continuation of these programs on the basis of a defense need without regard to the existence of such a need for any or all of the designated commodities.

The bill is similar to H. R. 6373, in the first session of the current Congress, differing primarily in these two respects:

1. H. R. 6373 would have left open the termination dates of the programs but would have doubled the quantities allowed to be purchased. S. 2876 would extend the termination dates of 5 years (to 1962 for beryl, mica, asbestos, and chrome, and to 1963 for tungsten, manganese, and columbium-tantalum) or until total purchases are double the amount already purchased at the time S. 2876 may go into effect.

2. H. R. 6373 directed that as much as $150 million of Defense Production Act funds were to be used to support the program. S. 2876 makes no reference to or limit on the amount of supporting funds which may be expended.

It is our view that the extension of the purchase programs at this time should be considered not on a basis of treating all commodities alike, but rather on an individual commodity-by-commodity basis, in view of the condition of the stockpile, current appraisals of defense requirements, and the conditions of the individual minerals industries.

The individual strategic and critical minerals and metals for which there have been purchase programs under the Domestic Minerals Program Extension Act of 1953 are the subject of several bills which are pending before your committee. These bills are S. 3499 (asbestos), S. 3486 (beryl), S. 3504 (chromite), S. 3485 (columbium-tantalum), S. 3453 and S. 3523 (manganese), S. 3455 (mica), and S. 3379 (tungsten). This Department is reporting to your committee on each of these bills, and we are making recommendations on the desirability of the proposed continuation of each of the purchase programs based on an analysis and consideration of all relevant factors with respect to each individual commodity.

In view of the introduction and consideration of these various bills, each relating to an individual commodity, we recommend that no action be taken on S. 2876.

The Bureau of the Budget has advised that there is no objection to the submission of this report to your committee.

Sincerely yours,

F. E. WORMSER,
Assistant Secretary of the Interior.

Senator MALONE. Recently I introduced a bill, S. 3793, merely to show that there was an alternative way of stabilizing the production of each of the seven minerals included in the 1953 Malone-Aspinall Act under which we have been purchasing critical materials. This bill would simply revert to the Constitution—the Tariff Commission, the agent of Congress, to regulate the tariff on the basis of fair and reasonable competition and which would take over at the end of any trade agreements which are now in existence. That was introduced on May 7.

Then I introduced a bill on each of these minerals merely so that they would be available for any principle that the administration might want to recommend or that the committee could agree to. That is S. 3794 dealing with tungsten on the same basis.

Let us not insert the bills themselves, but just the number and description of what they contain.

The CHAIRMAN. The number and description of the bills will be carried in the record at this point for further reference.

S. 3793, a bill to provide relief for producers of tungsten, manganese, chromite, mica, asbestos, beryl, and columbium-tantalum bearing ores, introduced May 7, 1956.

S. 3794, a bill to provide relief for the tungsten industry, introduced May 7, 1956.

The CHAIRMAN. This will end the hearing this morning, but I would like to have an executive session for a few minutes to determine what may be necessary to close the record. Of course the staff will be able to procure such additional information as we may need for final action.

Senator MALONE. Before you close the hearing, I should like to compliment the chairman. He has been very patient in all this discussion. He has gone into the subject very thoroughly, and I think the committee has plenty of information now, with Dr. Flemming's recommendation and the Assistant Secretary of the Interior, to come out with a bill that upon which everyone can agree.

The CHAIRMAN. I am sure that Dr. Flemming and all the witnesses we have had from the Government have been very helpful to us. We appreciate your appearance here this morning, Mr. WORMSER.

Mr. WORMSER: Mr. Chairman, if it would be helpful to the committee, we have some experts here, and they are at your disposal if there is any additional information you may require in your deliberations.

The CHAIRMAN. Our staff will get in contact with them for whatever information we may need. Thank you.

(Statements filed with the committee follow:)

STATEMENT OF SENATOR WAYNE MORSE ON S. 3504

Among the bills under consideration by your subcommittee in the course of these hearings is S. 3504, sponsored by myself and Senator Neuberger. It extends to 1961 the purchase program for chromite established under the Defense Production Act of 1950 and the Critical Materials Stockpiling Act of 1946. I wish to commend the subcommittee for undertaking this reevaluation of the minerals stockpile and the prospect for future development of metals vital to the American economy in peace and war. Undeniably, many of these ores can be produced abroad and transported to the United States more economically than we can now produce them ourselves. But that is not the sole consideration involved here, as you know. In the large sense, it is not "economic" to reduce American industries to complete reliance upon foreign imports for essential raw materials, nor to strip many communities of a prime source of income.

In Oregon, the industry producing chromite ores and concentrates was valued at $400,000 in 1955, and in 1954 at $536,387. In 1951, when the one Government purchase depot for chromite was established at Grants Pass, Oreg., its value was only $62,972 in the State. By far the major part of Oregon's chromite production occurs in Josephine County in southwestern Oregon. In 1952, after the purchase program was underway, there were 39 chromite operations in Josephine County, out of a State total of 53, with the Josephine County operations accounting for 90 percent of the total production value. These figures have remained about constant throughout the period of operation of the depot. Thus, an interruption in the incentive program for chromite would have a serious adverse effect upon this area. Much the same situation would exist in northern California. I might add that of the 20,000 long tons of chromite the depot is authorized to purchase, only 93,985 long tons had been bought at the end of September 1955.

But the necessity for continuing production at these mines has a national as well as local application. As the subcommittee knows, there are no known,

commercially acceptable substitutes for chromite for metallurgical purposes, and chromite is essential to the manufacture of stainless steel. At present, industrial production needs are met almost entirely with imports, with no duty on chromite ore. The American demand for chromite is expected by the Bureau of Mines to double by 1975, while known, high-grade foreign reserves are rapidly running out. In fact, the Bureau's 1955 forecast states that a significant shift away from present sources of ore for metallurgical uses will occur within a generation. Clearly, the United States must anticipate an increasing need to make use of domestic chromite ore, most of which is located in Oregon, northern California, and Montana.

For this reason, I believe exploration and production must be maintained by the continuation of an incentive program. Improved mining and beneficiating techniques can be expected from the industry if it can depend upon a program of this kind. I understand that the subcommittee will look into the possibility of shifting to the Bureau of Mines the responsibility for encouraging the production of domestic minerals, and the adoption of a bonus system rather than a purchase program. Whatever the decision may be concerning future management of the program, I urge that chromite be included in it. The continued development of this important metal is in the national interest and should not be disrupted by suspension of the incentive program.

UNITED STATES SENATE,
COMMITTEE ON ARMED SERVICES,
May 25, 1956.

Re statement on status of tungsten industry today.
Hon. JAMES E. MURRAY,
Chairman, Interior and Insular Affairs Committee,
Washington, D. C.

MY DEAR SENATOR: The Government's buying program for tungsten will run out by the end of this month of May. This program consisted of the purchase by the General Services Administration of 3 million units over a period of not to exceed 3 years, at a price of $63 a unit. The 3-year period was to expire on June 30, 1958, so consequently, it is terminating about a year and a half ahead of schedule. It is only during the last 2 years that the United States has become self-sufficient in tungsten.

During the Korean crisis, a limitation was placed upon the use of tungsten by the Defense Department, and this limitation still exists. During the Korean crisis, and also in previous years, most of the tungsten used in this country was obtained from foreign sources such as Bolivia, Portugal, Spain, China, and Korea. A real impetus was given to the industry by the Government so that today this country is self-sufficient.

With the Government's buying program running out this month, it is readily understandable that the tungsten industry faces a crisis Even though production in 1955 approximated 16 million pounds of tungsten metal, consumption was less—at about 9 million pounds. This gap between production and consumption can be closed by the release of restrictions on tungsten use by the Defense Department, together with an increased use of new alloys much more suitable than those now being manufactured. The Tungsten Institute has taken the lead in this project by means of a contract with the Stanford Research Institute. The object of this research is to develop a tungsten alloy capable of operating temperature around 1,600 to 1,700° F., and eventually exceeding 2,200° F. At present, the average life of the turbine blades in jet engines will average 100 hours. This is nothing and surely must be improved before the United States can catch up with the development by the Russians in tungsten alloys, and also to give an adequate life to jet engines contemplated for use in commercial aviation.

At the present time, it appears that the Government program will be to extend the tungsten purchases for a period not to exceed 2 years at a purchase rate of the maximum of 500,000 units per year at a price of $52.50 a unit. There is a further restriction that no one mine can sell to the Government more than 5,000 units a month. To those engaged in tungsten mining, this program would be entirely unacceptable and would spell the death of the operators who have done so much to make this country self-sufficient.

Haile Mines property in North Carolina produces 14,000 units a month, so it faces a virtual shutdown. In my opinion, this is not a very good way to treat a company which has taken the lead in developing the tungsten industry. There

are several other properties whose production will be cut, and it is doubtful whether they can survive on sales of 5,000 units a month. Several smaller producers also will be eliminated because they cannot make ends meet at a price of $52.50 a unit

Further, the total of the million units is entirely too small. The tungsten mining industry certainly is entitled to fair treatment by the Government, and the aforementioned program contributes only to its demise. What this industry requires is a 3-year program for 3 million units, with no restrictions whatsoever, concerning the amount that each mine may contribute to the welfare of this country.

Sincerely,

HERMAN WELKER,
United States Senator, Idaho.

UNITED STATES SENATE,
CONFERENCE OF THE MINORITY,
April 19, 1956.

Hon. JAMES E. MURRAY,
Chairman, Interior and Insular Affairs Committee,
Washington, D. C.

DEAR MR. CHAIRMAN: As cosponsor with you and others of S. 3455, a bill to encourage the discovery, development, and production of mica in the United States, its Territories, and possessions, and for other purposes, I wish to submit the following remarks for the record.

Mr. Chairman, I believe that the program of stockpiling of strategic materials, of which mica is one, is one of the most vital undertakings in our whole defense and preparedness operation. We all know, when World War II caught us more or less unawares, the great concern we had about a continuous supply of these mineral ingredients so vital to our defense. A program of encouragement for the discovery and development of domestic sources and the stockpiling of these durable minerals, which present no particular problem in storage, is to my mind exceedingly sound.

Aside from these considerations of defense and preparedness there is also the factor of the part that the development of the production of these minerals plays in the economy of various sections of the country. In my own State of New Hampshire the production of mica is a small but vital part in the economy of the State, and I am pleased that one of the three mica depots of the country is located there in Franklin.

Mica, as you know, has many vital uses and increasingly so in our highly developed electronics industry and we all know how dependent the armament of the present and the future is on electronic equipment.

It is my understanding that the original goal of mica procurement has been about half reached, with an expenditure of little more than half of the funds originally provided. The reason for this as I understand it is because the quality of the mica that has been produced is somewhat higher than originally anticipated. The extension of 5 years, as provided in S. 3455, would therefore not call for any immediate expenditure of money and such small increase as would be necessary in reaching the final goal would be money well spent in my opinion.

I have been somewhat disturbed by the fact that in recent months production in my area at least has slowed down due to a succession of postponement in the administrative promulgation of a new program of buying procedures. I trust that the new program, now somewhat overdue, will shortly be forthcoming so that if this bill is passed the program can proceed rapidly toward a successful completion.

Sincerely yours,

STYLES BRIDGES.

STATEMENT OF SENATOR MIKE MANSFIELD (DEMOCRAT, MONTANA)

DOMESTIC MINERALS LEGISLATION

Mr. Chairman, I would like to take this opportunity to express my views in behalf of the domestic mineral legislation which is being considered this morning by the Subcommittee on Minerals, Materials, and Fuels. I am a cosponsor of S. 3453 and S. 3523, however, I want to assure the subcommittee that my

interests are not limited to just these two measures. I am vitally interested in all of the bills up for consideration today, particularly insofar as they effect Montana and the defense of the Nation.

We hear a great deal these days about prosperity, but it is not the case for the domestic mining of tungsten, manganese, chromite, mica, asbestos, beryl and other metals which are suffering from lack of prosperity.

Congress passed H. R. 6373 during the last session of Congress to continue the domestic mineral purchase program, but the bill was vetoed by the President. If Congress does not do another thing before adjournment I feel that new domestic minerals legislation should be sent to the White House. If the purchase program or a substitute is not renewed the mining industry will suffer greatly, many plants and mines will have to be closed or curtailed and the net result will be an increase in unemployment in the industry.

The subcommittee is familiar with the provisions of these bills, so I do not want to restate them at this time. In regard to S. 3453, I feel that section 2 is quite important, an alternative to the ODM–GSA purchase program. This section would authorize and direct the Secretary of the Interior to provide for the payment of a production bonus to any producer of tungsten, manganese, chromite, mica, asbestos, beryl or columbium-tantalum bearing ore, all in short supply and all of strategic importance. This is an approach well worth looking into.

The tungsten program is due to expire shortly. In the State of Montana we have instances of companies who have gone to considerable expense to develop a very promising tungsten property, in addition to more recent improvements. All of this development will have to be written off as a bad deal if the program is allowed to expire. If these mines are closed, it is likely that they will never be reopened, regardless of the scarcity of the metal, because of the vast amount of expense involved.

Tungsten was once a seldom-explored, often-ignored metal, but today it is one of the most strategic metals in the world. According to a statement made on the floor of the House by the Honorable Clair Engle of California, the Defense Department has limited the use of tungsten in jet engines because of a supposed shortage. The purchase program has brought out tremendous production of tungsten in this country, and we have a sizable stockpile. It seems ridiculous to revise the current uses of tungsten in the light of the demonstrated ability of the American miners to produce it.

The domestic manganese industry is confronted with a very serious situation. Quotas under the present manganese purchase program are rapidly being filled, and many of the processing plants are being closed down. Manganese mining communities will soon become depressed areas. I strongly urge that the domestic manganese program be extended until 1961, in readiness for any emergency.

In times of national emergency our existing supplies and stockpiles of strategic minerals would soon disappear. We cannot afford to be caught short-handed in this instance. In view of the unsettled conditions in the world today it is difficult to know how long some of our foreign markets for these scarce minerals will be accessible.

In the instance of chromite the field in the Red Lodge, Mont., area is the largest chrome potential in the United States, but it is not being developed and cannot be unless the chrome purchase program is expanded.

In the interests of the future economy and security of the United States I recommend that the domestic minerals purchase program be extended until 1961. I am not suggesting that we completely cut off our foreign supply of these minerals. The domestic minerals purchasing program provides for emergency needs above and beyond our annual consumption as supplied by domestic and foreign mining interests.

These mineral-purchase programs have provided new life for Montana industries, particularly in the mining of chromite, tungsten, and manganese in the State. The program has provided new advancement in mining techniques, the program has diverted employment from depressed areas and it has injected additional security into our economy.

In closing I ask that the subcommittee give serious and favorable consideration to the renewal of the domestic minerals purchase program as outlined in the various bills being considered today.

Mr. Chairman, due to the interest shown by the Montana mining industry, I ask that a number of telegrams and communications be made a part of the record.

ANACONDA, MONT., *April 10, 1956.*

Hon. MIKE MANSFIELD,
United States Senator from Montana,
Senate Office Building, Washington, D. C.

Sincerely hope there will be favorable legislation regarding further tungsten stockpiling beyond the present program due to expire shortly. Have gone to considerable expense to develop a very promising tungsten property; also have built a 100-ton concentrator; have been shipping concentrates since November of 1955; all development work and new mill will have to be written off as a bad deal if program expires as planned. It seems that the mining industry should be given consideration for developing and bringing into successful production a new source of badly needed metal, if this prospect is closed down now due to unfavorable metal price it is doubtful if it will ever be reopened. The mill will have to be disposed of because of its special flowsheet not being adaptable to other metals, it seems a shame to develop a badly needed metal and then just when it is in production to close it down maybe never again to reopen. I was mine foreman at the Mouat chrome properties during the war and saw what happened there; a $8 million plant built up and in production and then dismantled completely now again chrome is classified as a scarce metal.

We sincerely hope Mike, that you, Senator Murray, and Representative Metcalf will do all you can to get a suitable program passed for a long-range mineral policy not only for tungsten but all the metals we urgently need to keep our country out of the have not class.

Best personal regards.

HUGH G. NICELY, *Manager,*
Tri City Concrete Products, Inc.

DILLON, MONT, *April 17, 1956.*

Hon. MIKE MANSFIELD,
United States Senate, Washington, D. C.

Respectfully request your earnest support of measure now before Senate committee which will support domestic tungsten industry. Present Government purchase program of this strategic metal for defense purposes will expire about June 1, when domestic producers will be obliged to compete with foreign production at greatly reduced prices. Government aid to foreign production will continue for about 3 more years. Local tungsten operations have been providing gainful employment to over 100 persons last 2 years and unless Government support extended will either seriously curtail or close this vital industry.

Sincerely appreciate the active aid you have heretofore extended.

Kindest regards.

BEAVERHEAD CHAMBER OF COMMERCE.

DILLON, MONT., *April 5, 1956.*

Hon. MIKE MANSFIELD,
United States Senate,
Washington, D. C.

DEAR MIKE: You will recall that I communicated with you last summer in regard to H. R. 6373, a bill for the continuation of the domestic minerals purchase program. This bill was subsequently passed by Congress, but vetoed by the President.

I understand that two bills are now pending, one in the House, the other in the Senate, both of which will give needed support to the domestic minerals production.

Here in Beaverhead County we are particularly interested in assistance for the tungsten industry. Minerals Engineering Co. has been engaged in the mining and milling of tungsten near Glen for the last 3 years, and is now among the 3 largest producers of that metal within the United States, solely because of these operations. The company is presently employing about 100 men at the mine and mill. If some support program is not enacted by Congress we are fearful that the company will be obliged to close, or seriously curtail, this plant.

Mr. R. G. Sullivan, of Grand Junction, Colo., vice president of Minerals Engineering Co., has been invited to testify before the Senate committee, and will be in Washington, D. C., for that purpose on April 18 and 19. I have suggested that he seek an appointment with you at that time to more fully explain the problems

now confronting the tungsten and related industries. I hope that you will be able to see him, as I know you are vitally interested in the matter.

With kind personal regards, I remain,

Yours very truly,

LEONARD A. SCHULZ,
Attorney and Counselor.

ANACONDA, MONT., *April 16, 1956.*

Hon. MIKE MANSFIELD,
Senate Office Building,
Washington, D. C.

DEAR SENATOR MANSFIELD: On behalf of myself and others engaged in the mining of tungsten in the Anaconda area, I urge your support of the tungsten mining legislation.

Tungsten was discovered in this area late in 1953. The existing law made mining possible. However, due to the late discovery, we are just now recovering our costs. Unless the new legislation is favorable, no profit will be realized by anyone in the industry and all operations will cease, while foreign operations will continue at our expense.

The tungsten mining program is responsible for adding approximately $25,000 per month to the economy in Anaconda through our operations. We consider this most important to continued prosperity in this area.

The company, of which I am president, has 14 stockholders. In addition 5 men are employed at the mine and 5 men at the mill. This is in addition to other small operators, all of which are producing a high-grade tungsten concentrate to add to the strategic minerals industry.

In view of the above, we sincerely urge your continued strong support of the proposed legislation.

Yours very truly,

JOHN J. MELOY,
President, Silver Hill Tungsten Mining Co.

SPRUCE PINE MICA CO.,
Spruce Pine, N. C., May 1, 1956.

Hon. JAMES E. MURRAY,
Chairman, Committee on Interior & Insular Affairs,
United States Senate, Washington, D. C.

DEAR SENATOR MURRAY: My name is S. A. Montague. I am the owner of the Spruce Pine Mica Co., and also president of the Mica Fabricators Association. During most of World War II, I was Chief of the Mica Section of the War Production Board. I am not engaged in mica mining, nor do I own any mica deposits.

I wish to take this opportunity to confirm and amplify the testimony I gave before your committee on April 20 in favor of bill S. 3455 for the support of domestic mica mining.

The present mica program expires June 30, 1957. The current rate of production will start to drop off in coming months unless an extension of the program is provided for. There is normally a very heavy turnover in the list of operating mines. Some are given up because unprofitable, others appear to be worked out and go out of production. Unless mine operators are assured of a long enough program, they will not have the incentive to prospect and develop new mines to maintain the present level of activity.

The present prices being paid for domestic mica do represent a very heavy subsidy as compared with the cost of imported mica, but even then it is very questionable if the price schedule equalizes for the immensely higher labor costs in this country. It is probably true that a majority of mica mine operators during the present program have actually lost money, and only a lucky minority have had rich enough mines to show a profit. Mica deposits are so erratic in richness, quality, workability, etc., that this is a normal condition.

There is no domestic mica industry worth mentioning without a government subsidy program. The records of the Bureau of Mines for the years between the end of the Colonial Mica Corp. program of World War II and the start of the present program, show annual production of the entire United States amounted to little over $100,000. If we need domestic mica we can get it only under a Government program that compensates for the higher costs of production in this country.

Now everything seems to point to the fact that we do need a high production of domestic mica. The stockpile objective of mica block and film is far from achieved. In fact, rumor has it that mica is the stockpile item with the poorest showing. There is no question as to the strategic necessity of mica. Bombers cannot fly without it, nor can our radar networks function, nor can the guided missile program succeed.

I believe the records of the Spruce Pine Mica Depot of GSA show that approximately 90 percent of all the mica it has purchased is of strategic quality. I believe a comparison of the domestic and foreign mica programs would show up much to the advantage of the domestic program as regards the proportion of strategic qualities in the total amount purchased. In addition, I can testify from frequent personal observations that the domestic mica as processed by the Spruce Pine Mica Depot is equal in quality and grading to foreign mica.

Mica possesses a unique combination of electrical and physical properties enjoyed by no other insulating material. For its most exacting uses there is no acceptable substitute. This is not to say that a complete mica substitute will not some day be developed. But we do not have it now and no one can say how many more years it will take. The Office of Defense Mobilization recently established a new program of research to develop a mica substitute for its principal strategic uses. I am strongly in favor of continued and even expanded research along these lines, but consider that it is not safe to depend on a successful outcome and to now decide that the domestic program can be allowed to come to an end. Security requires both efforts—domestic production as well as research—for the next few years.

While domestic mica under this program is admittedly expensive, it will be far more costly in various ways to wait for an emergency to develop, and then embark on an all-out program of domestic mica production as a necessity because our principal foreign source cannot be depended on. Costs will go up and efficiency go down in a wartime emergency program which has to compete with a hundred other equally important programs for man power, equipment, priorities, etc.

I sincerely hope that S. 3455 will be given favorable consideration by your committee.

Very truly yours,

S. A. MONTAGUE.

LOS ANGELES, CALIF., *May 5, 1956.*

Senator JAMES E. MURRAY,
Chairman, Senate Interior and Insular Affairs Committee,
Washington, D. C.

It is vital to World Manganese Corp., in Artillery Peaks area of Wenden, Ariz. and the Manganese Industries in general for passage of bills S. 3453 and S. 3523 in this session of Congress. The small-business man will be eliminated if these bills are not passed. If my organization can give any assistance to expedite matters please advise me.

Dr. O. L. JAGGERS,
President, World Manganese Corp.

TROJAN POWDER CO.,
Allentown, Pa., April 30, 1956.

Hon. JAMES E. MURRAY,
United States Senate,
Washington, D. C.

DEAR SIR: The Senate Interior and Insular Affairs Committee, of which you are a member, is currently holding hearings on a number of measures which have as their objective the continuance of purchase programs for a number of strategic materials. One of these bills (S. 3379) would extend the tungsten program until June 30, 1959, and would provide for the purchase of an additional 3 million units.

This company, a small-business establishment, manufactures explosives and has plants in California, Illinois, and Pennsylvania. Amongst our customers are producers of tungsten, who are vitally interested in the passage of the above legislation. If the present domestic tungsten program is completed by June 1, 1956, then it will become impossible for domestic producers of tungsten to con-

tinue their operations. The conditions to be corrected by the pending legislation that injure these customers naturally affect us too. Not only would the closing of tungsten mines mean unemployment for the many individuals engaged in the mining activities but a similar reactiton would occur in the operations of mining suppliers, including ourselves.

We believe it to be in the interests of the United States to provide proper protection to assure a healthy domestic tungsten mining industry, especially in view of the strategic nature of this vital material. To ignore present conditions is to invite a damaging of the domestic economy and disaster during war emergencies. We believe the foregoing legislation is designed to protect our domestic economy and security. Accordingly, your support is earnestly solicited.

Very truly yours,

J. J. McINTIRE, *Treasurer.*

STATEMENT OF STRAFFORD MINES, INC., BRISTOL, N. H., TO COMMITTEE ON INTERIOR AND INSULAR AFFAIRS ON S. 3455, A BILL TO EXTEND THE MICA PROGRAM

My name is Kenneth L. Jones, Bristol, N. H. I am president of Strafford Mines, Inc., Bristol—the largest producer of mica in the Northeast—and am president of the New England Miners Association, a group in which most of the members have been priced out of business by the overly strict interpretation of the mica-purchasing regulation as set up by GSA at Franklin, N. H. I have talked with a number of past and present operators and have been asked to represent the New England views by them. We favor the extension of the program, assuming that the new program to be announced before May 15, 1956, is a sound one.

The world war years taught us the importance of mica in the defense of liberty and our way of life. It proved conclusively that we could not depend on current production of foreign mica supply. For almost the entire war, mica was No. 1 on the critical strategic list of the War Production Board. In the event of a shooting war our chances of obtaining a large volume of mica from India, which was our principal source during the last war is not nearly as good as it was then. We are all familiar with the political gyrations of Nehru.

Therefore a stockpiling program was instituted. Until the last of 1952, only foreign mica was purchased. After years of pursuing this foreign program it became evident that foreign sources would not supply the stockpile requirements. Due to the tax structure (excess profits tax, etc.) in the supplying countries, an increase in price would not bring forth more mica. Rather a price increase would tend to decrease the amount of mica offered.

Therefore a subsidized domestic program was instituted in 1952. This program had a twofold purpose: To produce mica for the stockpile and maintain a nucleus of experienced mica personnel active in this country. The lack of these people hampered the production of mica during the last war more than anything.

This program has failed as evidenced by the following facts:

The first goal set was to be reached in 3 years. After 4 years' operation the goal is only about one-third achieved.

In the New England area alone at least 25 producers who started participating in the program have been priced out of business. Many of these were the Nation's largest producers during the last war too.

Many of the more reliable producers have not participated in the program because it did not appear attractive to them. Experience has proved them correct.

Rather than make the obvious changes necessary to put the domestic program on a sound footing there is now talk of a miracle synthetic mica program saving the day. It is true that synthetic mica can be produced but it is of scrap quality and has to be ground and molded into plates from which designs may be punched that will replace sheets made from splittings (not in short supply) but there is nothing in the foreseeable future that will produce a synthetic mica to replace the block mica now being produced from the mines.

From the information we can obtain the stockpile goals in mica are a long, long way from being attained so why not a domestic program that will permit present and potential operators to assist in reaching this goal.

We submitted a suggested flat-price program by letter dated December 12, 1955, to GSA, and have since gone over it with Mr. Bland and Mr. McDermand of the Black Hills Mica Association. They have endorsed it by a statement, a copy of which is enclosed. We have also gone over it with Mr. Phillips of the

Southern Domestic Mica Association and others of his group and while we have no formal endorsement they have agreed in principal. We agree with Mr. Bland and Mr. McDermand's testimony that the present program due to its nature is difficult to administer. This is one of the main reasons in asking for a flat price, it being almost foolproof from an administrative standpoint and would put all the depots on a fair and even basis. We feel that the mere extension of a program that has practically priced 2 of the 3 depots out of business is of no value unless GSA adopts the flat-price program proposed.

Therefore we urge the adoption of the bill to extend the program and that GSA adopt the flat-price program as it appears to be the only fair program that will give all the miners equitable treatment, regardless to which depot it is sold.

HATCH, N. MEX., *May 7, 1956.*

Hon. DENNIS CHAVEZ,
United States Senate,
Washington, D. C.

DEAR SENATOR CHAVEZ: In regards to the mining of manganese, I was the welder and blacksmith at the Haile mine at Lake Valley last year and I was laid off last November because the mine was forced to close.

There is no work to be had around here and it is pretty hard to support a family with no income; also there are about 30 other fellows here that are in this same fix and if the mine was reopened they would all have jobs and also the payroll would help lots of others.

Very truly yours,

GEO. A. BENVIE.

SPRUCE PINE, N. C., *April 25, 1956.*

Hon. JAMES E. MURRAY,
Chairman, Minerals, Materials, and Fuels Subcommittee,
Senate Office Building, Washington, D. C.

DEAR SENATOR MURRAY: The members of the Domestic Mica Miners Association have given considerable thought to a possible change in the program now employed for the purchase of mica, and we desire to submit the following recommendations for your consideration. We feel that these recommendations, if carried out, would add substantially to the mica stockpile, thereby contributing to the national-defense program.

We believe it would be advantageous to the Government as well as to the miners and others involved to eliminate the present price schedule in program A and adopt a flat price for all mica, size 6 and larger, stained and better, purchased under this program. It is our proposal that the Government discontinue the purchase of heavy stained mica, since it is not of stockpile quality. We think it would be advisable to have the miner sign an acceptance to any drastic change in the program such as the elimination of heavy stained mica from the purchase program. Our proposal is based on the following figures:

Average price per pound paid from beginning of program until June 30, 1955	$13.87
Mica miner's average price cut by 18 percent or $2.50 per pound by punch trimmer whose mica averaged $8.55 per pound and represented 18 percent of total mica sold	2.50
	16.37
Increase in cost of equipment and supplies, plus 33⅓-percent increase in labor effective Mar. 1 by Federal law	4.62
	20.99
An estimated 10-percent gain in weight is anticipated by trimming for stained instead of good stained quality	−1.38
Flat price	19.61

To simplify purchasing on the A program, we recommend that the buyer estimate the amount of heavy stained, if any, in the lot of mica offered for sale, and then pay an initial payment of 90 percent of the value of the estimated

amount of stockpile quality mica. This procedure would prevent the buyer from turning down a miner's lot of mica because it might contain a small amount of heavy stained mica. By withholding 10 percent of the payment until the mica is processed, it would be possible for the Government to get exactly what it pays for. (After processing the mica, the Government would return the heavy stained to the seller on his next visit to the depot.)

We feel that the hand-cobbed or B program should remain in effect to prevent deviation from the original intent of the program, which was to give the miner his choice as to how he would sell his mica. Under close Government supervision, a greater recovery can be realized and the miner can receive full value from the mica he is able to produce. A good miner is not always a good processor, and if he does not fully understand how to process his mica, he will inevitably destroy a natural resource which is sorely needed for the Government stockpile. Furthermore, if a miner is free of the responsibility of processing his mica, he will be able to put more time to mining and greatly increase production.

From the best estimate available, it is our opinion that if the heavy stained and black spotted mica is not trimmed, there will be a recovery of approximately 800 pounds of punch from an average ton of mica. Punch recovered by the method given above would be worth approximately 30 cents per pound or $240 from an average ton of mica. It is our opinion that the miner who chooses to sell his mica under the hand-cobbed program should not be charged any trimming and processing costs, because the value of the punch and scrap as mentioned above would offset the trimming costs. (There will be fewer pounds of mica to trim from an average ton, since heavy stained and black spotted mica will be left in the punch.)

Of the total mica purchased at the Spruce Pine Depot, approximately 1.3 percent has been size 3 and larger; and we estimate that under the proposed flat-price system of stained and better a much higher percentage of large patterns of mica will be purchased. We believe too that our proposal will result in an increase of at least 30 percent more mica in the stockpile.

The present program is falling far behind the goal originally set, not only on the domestic program but on foreign mica as well. It is our understanding that the stockpile of certain types of mica used in jet engines would be exhausted within 3 or 4 weeks if a serious emergency should arise. India has in the past used mica as a bargaining force for numerous considerations, and at present is not providing as much mica as is needed. The deplorable situation in Brazil has resulted in our being unable to purchase the amount of mica anticipated, even though a 20 percent increase in price was recently allowed on mica coming to us from Brazil. Furthermore, importers of foreign mica are required to purchase 100 pounds of heavy-stained mica for each 100 pounds of stockpile-quality mica imported.

The people who were responsible for the original mica purchase program were well aware of the fact that this country was not, and could not be self-sufficient in mica in case of an emergency. It was their belief that the domestic purchase program was necessary in order that the know-how would not be lost, and that there would be a nucleus of an industry that could be rapidly expanded in case of all-out emergency. A 5-year extension to the mica purchase program, if given now, would encourage sufficient expansion in the industry to reach the goals which were originally anticipated.

We wish to assure you that all individuals comprising our organization stand ready at any time to assist you in any way possible. Your kind consideration and cooperation in this and all other matters will be appreciated.

Very truly yours,

DOMESTIC MICA MINERS ASSOCIATION,
/s/ SAM L. PHILLIPS, *Chairman.*

UNION CARBIDE NUCLEAR CO.,
A DIVISION OF UNION CARBIDE & CARBON CORP.,
Bishop, Calif., April 13, 1956.

Re Continuation of Domestic Tungsten Program.

To the Subcommittee on Minerals, Materials, and Fuels,
Senate Committee on Interior and Insular Affairs,
United States Senate, Washington, D. C.

SIRS: We have received your Notice of Hearing on Minerals which was enclosed in an envelope addressed to Mr. F. S. Haggerson, inviting us to appear at the

hearings to be held on April 19 or 20 or to send in a statement expressing our views on the bills mentioned in the invitation. Union Carbide Nuclear Co., a division of Union Carbide & Carbon Corp., having a tungsten mine, a tungsten mill, and an office at Pine Creek, near Bishop, Calif., in response to your invitation, is pleased to submit this statement in support of a continuance of the Government program for the production of tungsten within the United States.

During he last war tungsten was placed on the list of the most critical and strategic materials by the War Production Board. It is an essential ingredient in tool steels which are needed in the manufacture of cutting tools. Cutting tools are needed in the manufacture of munitions and for making engines, tanks, shells, gun linings, trucks, ships, automobiles, etc. It is also widely used in armor-piercing projectiles. It is a necessary ingredient in magnet steel, electric lamps, radio tubes, X-ray tubes, electrical contacts, high-temperature alloys used in jet-propulsion engines, and other gas turbines.

The principal tungsten-producing States are California, North Carolina, Montana, Nevada, Idaho, Colorado, Washington, Arizona, and Oregon.

During the First World War domestic production increased rapidly and the conditions and circumstances under which the United States producer mined and sold his tungsten concentrates resulted in a great expansion in the industry. At the conclusion, however, the price rapidly declined to the point where domestic mines could not compete with foreign imports, especially importations from China which began in 1916. During 1921 and 1922 tungsten production in the United States was at a standstill; and for many years thereafter the tungsten industry suffered.

The outbreak of the war in Europe in 1939 caused an unusual demand for tungsten and production increased. Tungsten was included in the list of strategic materials to be purchased under the Strategic Mineral Act of June 7, 1939. In this year the Bureau of Mines and the Geological Survey started their work in searching for and appraising tungsten-ore deposits and this work continued at an increasing rate all during the war. In 1945 there was a decline in the industry resulting in the closing down of many operations. The postwar years of 1946 to 1949 were very slow, with the bottom being reached in 1949.

In 1950 with the outbreak of the Korean hostilities the demand for tungsten increased substantially, but the tungsten industry was in a depressed state. In May 1951, the Government announced a domestic tungsten program for purchasing Government specification grade tungsten concentrates for a 5-year period or until 1,468,720 units were purchased. On June 20, 1951, this was amended to provide for termination of the program when 3 million units have been delivered on or before July 1, 1958, whichever first occurs. The General Services Administration recently announced that the quota of 3 million units will be filled sometime between now and June 1, 1956. The domestic tungsten program has stabilized the domestic market, but foreign concentrates are now being imported duty paid at a value that would close many domestic mines and mills.

Domestic production of tungsten ore and concentrates is largely obtained from underground mine workings requiring skilled high priced labor. The ore must also be milled or otherwise beneficiated. Imported tungsten can be sold in the United States at less than domestically produced tungsten due to the fact that tungsten ore is produced more cheaply in some foreign countries than in the United States. For instance, the Chinese tungsten deposits are surface deposits in which the tungsten ore results from weathering of the formations containing the tungsten ore veins. It is only necessary to pick up pieces of tungsten off the ground or wash the tungsten minerals out of the surface dirt to produce concentrates. A similar condition to that in China exists in other foreign countries, and where the standard of living is low, tungsten concentrates can be produced very cheaply.

Union Carbide Nuclear Co. has invested large sums of money in its mining, milling, and research activities so that it is now in a position to treat the complex types of western tungsten ores that comprise the largest part of our domestic tungsten reserves in the West. The mill at Pine Creek, Calif., also treats ore produced by many small miners in that area and is the largest mill of its type in the world. During wartime our supply from foreign sources might be limited to our own hemisphere which produces low-grade concentrates requiring special facilities and skilled labor such as are available at the Union Carbide Nuclear Co.'s Pine Creek, Calif., mill. The curtailment of this operation and dispersion of the skilled labor necessary to maintain it would seriously jeopardize the supply of tungsten in the United States in time of emergency.

The closing of this operation will have a far-reaching effect upon other tungsten mining operations in that our Pine Creek mill has been purchasing the crude ore mined by a number of independent miners in California and Nevada, and mines will be closed resulting in unemployment and loss of revenue to suppliers of other needed raw materials and services. Once a mine is closed down it cannot be brought back into production overnight. Mines may become filled with water, caveins occur, piping and other facilities deteriorate, and labor moves on leaving ghost towns in their wake.

Having at all times within the United States a healthy tungsten industry is of utmost importance to national defense. Should a national emergency arise at a time when the United States is without a sound domestic tungsten industry and imports are cut off from abroad, the results can only be disastrous.

The situation is well summed up in the following excerpt from the Report of the Minerals, Materials, and Fuels Economic Subcommittee of the Committee on Interior and Insular Affairs, 83d Congress, Pursuant to Senate Resolution 143, a Resolution To Investigate the Accessibility and Availability of Supplies of Critical Raw Materials (pp. 40 and 41):

"TUNGSTEN

"The tungsten industry has had a checkered career for many years * * *.

"The tungsten mines were shut down after World War II owing to lack of protection against low-wage foreign competition. The domestic mines are now capable of supplying peacetime domestic needs, and their production was vitally necessary in World War II and for the Korean war mobilization. It took 2 years and more to reopen them and operate them at capacity at a time when they should have been in full production.

* * * * * * *

"CRITICAL AND STRATEGIC MINERALS IN CHINA

"China is known to have significant reserves of virtually all critical and strategic minerals.

"Should peace come in Asia and exports again start flowing to the United States, one witness testified, our domestic mineral industries could be wrecked under our inadequate tariff system as it is operated by the State Department under the Trade Agreements Act of 1934. It was further stated that mineral producers in the United States and the Western Hemisphere cannot compete on a fair and reasonable basis against labor that is virtually slave labor under one of the lowest standards of living in the world. The question was asked, "Should the safety and security of the Nation be allowed to rest on cheap material coming from a source that is and will continue to be notoriously antagonistic, whose ultimate objective is to assist in destroying the United States economically?"

The findings of the subcommittee, from which the following excerpt is taken (p. 5), emphasize the necessity of maintaining at all times a healthy industry for the production of critical materials.

"FINDINGS

"The findings include conclusions developed from the 10 parts published testimony and are the foundation for the 14 recommendations for the United States Senate. This is in conformance with Senate Resolution 143 directing the committee to determine the accessibility of the critical materials to this Nation in wartime, and for our expanding economy and security.

"1. The Western Hemisphere can be defended and will be the only dependable source to the United States of critical raw materials in the event of an all-out war.

"The delivery of any such critical materials to the Nation across a major ocean during such a conflict will be highly problematical.

"The evidence indicates that it now is possible for the enemy to destroy the production of critical materials at their source and, in any case, sealanes will be even more difficult and costly to depend upon than was the case during prior wars.

"The Western Hemisphere can be made self-sufficient in the production of critical materials which are essental in war.

"Since the testimony of competent witnesses indicates that the Western Hemisphere will be the only dependable source of critical raw materials in the event of an all-out world war, it is imperative to the security of this Nation and to the nations of the Western Hemisphere that we and they foster the greatest measure of self-sufficiency in the production of such materials and continually study all possible devices that will encourage the expansion of hemispheric production in this vital field.

"It is vital to our domestic welfare economy and security that maximum economic production be maintained, first, within our own borders and, second, in the Western Hemisphere.

"2. During the last more than a quarter of a century established procurement practices have dangerously increased our dependence for the critical materials upon nations across major oceans without which this Nation cannot survive.

"We must avoid dependence upon overseas suppliers to the extent that these suppliers could suddenly render us impotent by withdrawing supplies of critical materials during a world conflict, or could use such dependence as a political or economic bargaining lever. * * * "

It is respectfully submitted that action should be taken to continue the domestic tungsten purchase program on such terms as will assure to the United States a going industry in time of emergency.

Respectfully submitted.

UNION CARBIDE NUCLEAR CO.,
By H. L. MCKINLEY,
General Manager, California and Nevada Operations.

STATEMENT OF C. O. MITTENDORF, ADMINISTRATOR, DEFENSE MINERALS EXPLORATION ADMINISTRATION

I want to thank you, Mr. Chairman, for the opportunity to submit to the committee a report on the progress and status of the DMEA program.

On the 6th day of last month, the exploration program had been in existence a full 5 years.

As of April 30, 1956, DMEA had received 3,086 applications covering proposals for the exploration for 33 different mineral commodities in 43 States and Alaska. Twenty-eight hundred and seventy-eight applications have been disposed of and the remainder of 208 are in process. Almost half of all applications processed have been denied mainly because information available indicated a low probability of making a significant discovery. Eight hundred and ninety-one of those acted upon have been approved and contracts executed. The total cost of the work authorized in executed contracts is about $42 million of which the Government has agreed to contribute a maximum of about $26 million. A geographical and commodity breakdown of these contracts is furnished to this committee monthly.

As of April 30, 1956, 286 projects had already found ore. Two hundred and thirty-six of these have been certified as "discoveries or developments and many of the remaining fifty will be certified when the results can be more accurately evaluated. On the basis of current information, the estimated recoverable value of the ore reserves inferred on the 236 certified projects is approximately $265 million. Royalties in the amount of about $1¼ million have been paid to the Government on about $25 million worth of ore already marketed under the program, and 20 operators have completely repaid the sums received from the Government.

Small business, represented by individuals, partnership, and corporate enterprises, has had an active part in the program. This is shown by the fact that approximately half of the contracts call for total expenditures of less than $20,000 and under them many operators were obligated to spend less than $3,000 of their own money to complete the authorized work.

As the program is open to everyone, its participants represent a cross section of the domestic mining industry, which consists of many small operators who necessarily restrict their activities to small projects, and relatively few larger operators who are in a position to undertake costly deep-level exploration. About 80 percent of all contracts executed to date involve project costs of less than $100,000.

During the 12-month period ending April 30, 1956, we received more applications than were received during the two previous 12-month periods. We approved 50 more contracts in the past year than were approved the year before, and also committed 20 percent more Government funds for exploration than in the previous year.

As of April 30, 1956, 208 applications were in process—as compared with 233 and 125 respectively at the end of the previous two 12-month periods. Furthermore, 197 contracts were in force representing work with an aggregate estimated cost of about $20 million, which figure has been more or less constant during the past 4 years.

These comparisons indicate that DMEA is entering its sixth year with its workload in a very healthy condition. This concludes my statement, and I will be glad to answer any questions the committee may have on DMEA's activities in the specific commodities which are the subject of the various mineral purchase programs.

TUNGSTEN—H. R. 9829 AND S. 3379

Tungsten has been one of the major categories in the mineral exploration program since its inception. We consider tungsten to be the second most important commodity in the DMEA program, generalizing from the following criteria: Number of applications received, total estimated cost of contracts executed, disbursement of Government funds to operators, and royalty repayments.

As of April 30, 1956, a total of 445 applications for tungsten exploration had been received. Four hundred twenty-nine of them have been acted upon and the balance of 16 are currently in process.

Of the 429 dispositions made, 115 resulted in exploration contracts authorizing, in the aggregate, $4,223,000 worth of new exploration work. These contracts ranged in value from $3,250 to $224,400. Total Government participation was estimated at $3,155,000.

These projects were located in Alaska, Arizonia, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Carolina, Utah, and Washington.

As of April 30, 29 of the 115 contracts remained in force, the balance of 86 having been terminated or cancelled. Of the 86 that have been wound up, 32 resulted in success and were certified as discoveries or developments. One additional project, still in force, has been certified, making a total of 33 tungsten projects now certified.

The ore potential of these 33 projects is estimated at approximately $26.8 million, based on the domestic purchase price.

Thirty-eight operators have paid some royalty to the Government from sales of ore resulting from their exploration projects. These royalty payments amounted to $380,850, the largest sum received for any single commodity, and representing gross sales valued at $7,620,000.

Five operators have repaid the Government in full. They continue to produce—so—the gross sales of $7,620,000 upon which DMEA has received royalty do not reflect the total value of the ore actually produced and sold. Nor does our ore potential value of $26.8 million take into account the value of the additional ore developed by the operators after their exploration contracts with DMEA were terminated.

I would like to make a few remarks about our ore reserve estimates—how they are calculated and how they undergo revision from time to time. I believe my comments, though directed to tungsten, do apply generally to all the commodities dealt with by DMEA and therefore might be of interest to this committee.

Under the DMEA regulations our work does not go beyond a reasonable delineation and sampling of the ore. It does not block out ore, nor can the work be prosecuted primarily for mining or preparation for mining. Consequently most of the reserves we calculate are in the indicated and inferred categories. We endeavor to be ultraconservative in our estimates.

It is obvious that a reconcilation of the original estimates with present-day facts must be made periodically, and we do this semiannually on all certified projects. There will be many occasions for revision, such as unexpected ore depletion, diminution of grade, and results of additional exploration and development work done solely by the operators.

Our field teams have been making semiannual inspections in accordance with detailed instructions from Washington. In addition to the one-reserve reconciliations, we are endeavoring to measure DMEA's role in encouraging additional investment of private capital for further exploration, development, and production facilities.

Information is now available of such extensive character as to make it possible for me to call some interesting facts to your attention.

It would appear that our certified tungsten projects had produced, through December 31, 1955, over one-half of all the reserve units we estimated were in the deposits at the time the contracts were terminated. However, when the results of new work done by the operators is taken into account, it now appears, based on the operators' estimates, that one and two-thirds times as many re-

coverable units remained in the ground as of December 31 as had been mined. In other words, the additional work done by the operators increased our original estimate of ore potential by almost 42 percent and increased its value of $26.7 million to $37.9 million.

On the basis of incomplete data, we can also report that additional investments made by 10 operators of certified tungsten projects for access roads, mine development, mills, powerlines, etc., exceed $1,400,000, which is more than the Government advanced for the initial exploration work on all the certified projects.

I venture to guess that when all facts are in hand, we shall find that ultimately the operators of all DMEA projects have invested additional capital of their own, which will equal or exceed the total dollars spent by the Government on all exploration projects—successful or unsuccessful.

It is difficult to forecast the net effect on the exploration program of termination of the current purchase program. If the tungsten industry must survive under world market prices, we would expect very few applications from small- or medium-sized operators. On the other hand, some of the larger operators might be inclined to shift some of their resources from production to exploration. As a matter of fact, there is some indication of that trend at the present time.

ANACONDA, MONT., *April 16, 1956.*

Hon. JAMES. E. MURRAY,
Senate Office Building, Washington, D. C.

DEAR SENATOR MURRAY: On behalf of myself and other engaged in the mining of tungsten in the Anaconda area, I urge your support of the tungsten mining legislation.

Tungsten was discovered in this area late in 1953. The existing law made mining possible. However, due to the late discovery, we are just now recovering our costs. Unless the new legislation is favorable, no profit will be realized by anyone in the industry and all operations will cease, while foreign operations will continue at our expense.

The tungsten mining program is responsible for adding approximately $25,000 per month to the economy in Anaconda through our operations. We consider this most important to continued prosperity in this area.

The company, of which I am president, has 14 stockholders. In addition 5 men are employed at the mine and 5 men at the mill. This is in addition to other small operators, all of which are producing a high-grade tungsten concentrate to add to the strategic minerals industry.

In view of the above, we sincerely urge your continued strong support of the proposed legislation.

Yours very truly,

JOHN J. MELOY,
President, Silver Hill Tungsten Mining Co.

STATEMENT BY CHARLES F. WILLIS, STATE SECRETARY, ARIZONA SMALL MINE OPERATORS ASSOCIATION, PHOENIX, ARIZ., BEFORE THE SENATE INTERIOR AND INSULAR AFFAIRS SUBCOMMITTEE ON MINERALS AND FUELS, ADVOCATING THE PASSAGE OF LEGISLATION TO CONTINUE THE UNITED STATES DOMESTIC CRITICAL AND STRATEGIC MINERALS PURCHASE PROGRAMS

The more than 3,500 members of the Arizona Small Mine Operators Association join me in asking the Congress to enact legislation which will continue and maintain in production the mines of the United States which produce vital strategic and critical minerals and metals that are necessary to national security.

A single glance at the current market quotations will convince the subcommittee that, considering the labor and material costs of mining today, it is simply impossible for United States producers of manganese, tungsten, chrome, asbestos, mica, and other important minerals necessary to national security to stay in business without, frankly, some sort of Government encouragement and support. This support could take several forms, such as increased tariffs, import quotas, direct purchases for the national stockpiles at prices which will permit our producers to live, or bonuses or subsidies to maintain them in business.

The recently held Western Governors Minerals Conference inclined strongly toward increased tariffs and/or import quotas. Undoubtedly, this would be the

simple and direct way to correct the situation. However, we must be realistic and conclude that advocates of this direct and logical course of action are swimming upstream politically, both in the domestic and international sphere, and that attempts to obtain either administrative action or legislation along these lines are most unrealistic.

What is left? Either direct stockpile purchases at premium prices or some sort of subsidy, call it what you will.

Direct stockpile purchases must end sometime. The former Munitions Board and the present Office of Defense Mobilization have beclouded the stockpile issue to such a point that neither the Congress nor the public knows what the situation actually is. It would seem that there is nothing settled about the stockpile aims. They are pulled in and out like an accordion and play a different tune with each military, economic, or political wind.

Your committee, reporting out favorably in 1955 the bill S. 922 to extend the mineral purchase programs, said: "Dealing with the contention of the Office of Defense Mobilization as expressed in various hearings that the stockpile objectives of some minerals have been nearly met, or that there is enough on hand to fight a war, it may be noted that ODM is operating within a fixed formula and appears to be bound thereby. Some elements of the formula are arbitrary, some are matters of judgment, and all may be considered variable according to opinion. All depend upon a complex number of factors. The objectives might well be greater than as now fixed.

"That the basic stockpile formula is not sacrosant is evidenced by the fact that stockpile objectives have changed from time to time and there are minimum as well as long-term (maximum?) objectives. Either the formula itself must have been modified or opinions or informed guesses must have altered the components of the formula?"

The report on S. 922 had many more comments along the same line, including a quotation from the famous airpower expert, Maj. Alexander de Seversky, to to the effect that: "I am convinced that all sources are within striking distances of enemy airpower on the other side of the globe and that we won't be able to get one ounce of material from them." De Seversky was quoted further as saying, "In the last war the enemy had no alternative but to attempt to cut our supply lines. Today, he need not bother with our supply lines; he can strike directly at the source of our strategic materials with his long-range airpower and neutralize them with atomic and hydrogen bombs."

In view of this, Senator Goldwater concluded: "It would be hard to think of better reasons for spending a few more dollars on domestic materials and keeping our mines in operating condition for emergencies."

I submit, gentlemen of the subcommittee, that Major de Seversky presents a frightening picture, but one which does not seem to stir the Office of Defense Mobilization one bit.

The Arizona Small Mine Operators Association is in a State which already has seen the damage which can be done to an infant industry by closing out a part of the manganese purchase program, with the consequent shutting down of the Wenden, Ariz., receiving depot, ruining some 50 mines and throwing hundreds of miners out of work. We know we have an economic problem as well as a defense problem. In a few weeks, unless remedial legislation is passed, our tungsten miners also will be out of business.

The asbestos producing industry of Arizona is also about to be shut down due to the reaching of stockpile quotas. The Arizona mines have the only source of long fiber asbestos to be found within the United States borders and it is a material that is vital to any national defense and security program. They have demonstrated their ability to produce something that has been sorely needed and any stopping of production at this time can mean a total and permanent inability to produce at some future date, no matter how bady needed.

An added point, as it relates to the asbestos producing industry in Arizona, is an economic angle in that this industry has provided the jobs and financial support of a large segment of the Apache Indian Tribe. Their means of obtaining a livelihood will be removed and there is nothing available to take its place.

The Arizona Small Mine Operators Association believes that the administration will be making a great mistake if it insists that the continued purchase of domestic strategic and critical minerals for the stockpile is not warranted and that the cost of so maintaining and expanding the domestic mobilization base is too great.

Evidently your committee shared this same opinion when it approved and sent to the floor S. 922 and H. R. 6373 of the last session. It is further evident that the whole Congress felt that the Office of Defense Mobilization was in error and therefore passed and sent to the President H. R. 6373. So, at least, the mining industry and the Congress are in accord.

If it is impossible to pass a bill, in such form that it will not be vetoed, to directly continue the ODM-stockpile purchases, something else must be done.

I call to the subcommittee's attention S. 3435, a bill to pay production bonuses to keep our mines open, and one which puts the administration of the program where it belongs, in the Interior Department. While the Arizona Small Mine Operators Association prefers more direct methods of supporting a healthy domestic mining industry than bonus payments, this well may be the only "out" at present. The administration already has given its approval to similar payments to the woolgrowing industry, and on the grounds that wool is a strategic material.

It would be easy to add to S. 3435 advantageous features from the other bills the subcommittee is taking testimony upon today, similar to those in the bill to extend the asbestos purchase program (a must, in our opinion), and report a package bill which would save the strategic and critical metal and mineral mines.

Significant to the discussion and the problem under consideration by your committee is an editorial published in the September 16, 1955, issue of Pay Dirt, the official medium of the Arizona Small Mine Operators Association. While this editorial was directly pertinent to the Presidential veto of H. R. 6373 the arguments given apply with equal force to the series of bills which are before your committee for consideration.

This editorial stated:

"The mining industry was both surprised and shocked at the Presidential pocket veto of H. R. 6373, the bill to continue the strategic metal and mineral buying programs until the dates originally scheduled for their completion.

"It was surprising because every possible effort had been made by the Congress, through compromises, adjustments and modifications, to draft a bill which was satisfactory to the various Government departments. The measure, as finally enacted, was modified to extremes which would have impaired its effectiveness but at the same time would satisfy the Government departments concerned.

"From the memorandum of disapproval issued from the White House on August 14, it was obvious that the President had been sold on the idea, by some of his Government departments, that this stockpiling program for strategic and critical metals and minerals was nothing more or less than the accumulating of lower grade ores for possible future emergencies. Nothing in the message indicated that consideration was given to the long-range objectives of this particular program.

"Experience during World War II with submarine sinkings and events since that time, such as cutting off manganese shipments to the United States by Russia, showed that it was essential for our country to make an inventory of its metals and minerals necessary to the national defense and which were not produced in this country in quantities sufficient for that purpose. Also, it was necessary to set up a program which would permit prospective mines to operate and produce those metals and minerals.

"Thus this particular stockpiling program was devised by Congress with long-range objectives and to cover only a segment of the domestic mining industry. The program was limited to those metals and minerals essential to the national defense program but on which the resources of the United States had never been adequately explored. Therefore, we did not know what, if anything, we could do in the event of an emergency and cutting off of supplies from foreign countries.

"The idea of purchasing and stockpiling was to provide a market for ores which could be produced in the early stages of mine development; to give assurance that the market would be continued for a period long enough to permit those who would participate to open up their properties, determine the possible ore reserves, and devise the processes necessary for making a commercially acceptable product; and to foster the establishment of new operations which could continue to exist and produce under normal conditions.

"It is much too late to initiate such a program after a national emergency arises. This is something that takes a lot of time—time which would not be available in the event of another war. Even though the money to do the job might be made available in such an emergency, we must realize that years, not months, are required to develop new mineral resources and bring them into production. Such a job can be done only during peacetime.

"If the President, and his advisers who suggested that he disapprove H. R. 6373, regarded this particular stockpiling program as nothing more or less than acquiring a quantity of low-grade ores and had no further objectives, he was justified in his veto. However, it is evident that the long-range objectives of the program were not given consideration, yet these objectives are just as necessary now as they were at the time the program was originally enacted.

"One very serious mistake was made in setting up this particular stockpiling program. Buying stations were established with fixed quotas, rules and regulations based on pure guesswork, and which had no relation whatsoever to possible accomplishments for the long-range objectives. The mistake was a natural one as at that time no one knew what the possibilities were.

"The error in setting up buying-station quotas was especially obvious in the case of the Wenden manganese depot where the quota was fulfilled in a relatively short time. In fact, the goal was almost reached whereby a large and permanent manganese-producing industry would soon be established in that area. This development was entirely the result of having a local buying station which provided a market for the minerals the mines could produce readily in their early stages, and which furnished the mine operators the funds for continued exploration and expansion of their activities to a point where they would soon be independent of Government aid or cooperation. Fulfilling the 6 million unit quota was accomplished more than 3 years ahead of the date of the legal termination of the program in 1958, as set up by Congress.

"Because the Wenden manganese producers were making splendid progress toward the accomplishment of the desired long-range objectives of this particular program, they were stopped by the shutdown of the Wendon station and were thus prohibited from reaching the ultimate objectives of the original act.

"The purchase program was designed as a practical and inexpensive method of making known to us our production possibilities for strategic and critical minerals, particularly for those for which we had been dependent on foreign countries. It definitely was not for the purpose of acquiring huge piles of rock which might, or might not, be used in the event of a national emergency.

"The President's pocket veto was not only a setback to the national security program but was further evidence to those who had been urged to produce the minerals and metals the country needs for national security that you cannot depend upon even the Government to carry on and go through to completion with the programs it starts. Those who may have similar projects in the future will see evidence in this veto that their efforts may be thwarted by Government action. As a result, they will think a long time before they even start to invest their money and to do what is essential to national security.

"Our Federal government needs a long-range mineral policy, but no long-range mineral policy will be worth a whoop if one has to fear that a new administration, or those who are not acquainted with the long-range objectives of previous legislation, will step in and upset the applecart. The Presidential veto was ill-advised from that point of view alone, as it was taken as a demonstration of lack of good faith. Here was a program designed for a specific and special purpose, with long-range objectives on which definite progress had been made, yet those who had been trying to help the Federal Government reach these objectives were penalized for making the effort.

"H. R. 6373 merely provided the funds for the continuation of the original program until the date set for its expiration. No one can deny that real progress had been made toward the accomplishment of the programs objectives of better preparing our country to meet a national emergency and to lessen the dependence of the Nation on foreign countries for material highly essential for national defense."

While we in Arizona are only primarily and directly concerned with the asbestos, manganese, and tungsten phases of this proposed program, we endorse and urge the enactment of the entire program for it is the principles and policies involved which we believe are necessary to a healthy domestic mining industry. We believe further that national security demands a healthy and going domestic mining industry and dependable production of those strategic and critical minerals and metals which have been in short supply in the past.

While we may not be able to reach a 100 percent dependability we do feel that we should approach this goal as closely as possible and it can only be done by some such program as this which provides for some degree of equalization of the differences in the costs of production between domestic and foreign sources of supply. It is only by some such program that we can protect United States stand-

ards of living and wages and still produce that which is necessary for national security.

It is essential that the Congress act with all possible expedition on this proposed legislation designed to create a long range national mineral policy and a healthy and going domestic mining industry. The Arizona Small Mine Operators Association is pleased to offer every support to your committee in getting such enactment and to attain the objectives sought.

MANOR MINING CORP.,
Darwin, Calif., April 18, 1956.

Senator JAMES E. MURRAY,
United States Senate, Washington, D. C.

DEAR SENATOR MURRAY: I am writing to request your consideration in the matter of the extension of the tungsten program.

It is vital that all possible means be used to see that the Government does not cut off the livelihood of hundreds of little miners like ourselves. We know that the termination of this program puts us out of business and wipes out all the money that we have invested, as it must in most other mining properties.

We appeal to you to do all in your power to aid all small tungsten miners to survive.

Respectfully yours,

DAVID GROSSMAN.

THE COLORADO MINING ASSOCIATION,
Denver, Colo., April 23, 1956.

Hon. EUGENE D. MILLIKIN,
Senate Office Building, Washington, D. C.

DEAR SENATOR MILLIKIN: The following facts have been presented to this office regarding the tungsten production of Boulder County:

During the last 12 months, 25,000 units, having an estimated valuation of $1,540,000, was produced. If present prices prevail and costs are not increased, it is estimated that 30,000 units will be produced during the next 12 months, with an estimated valuation of $1,845,000. A slight reduction in price would seriously reduce the production. A lowering of the price to the world price would close down all of the mines.

Sincerely,

ROBERT S. PALMER.

STATEMENT OF E. F. CHAMBERS, GENERAL MANAGER, OF THE SOUTHWEST OIL CO. BEFORE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS; MINERALS, MATERIALS AND FUELS SUBCOMMITTEE

This prepared statement is given by the undersigned corporation in accordance with permission given by your honorable subcommittee on May 25, 1956, through Congressman B. F. Sisk. Since your hearings on the strategic materials bills were concluded on May 24, 1956, permission was given the undersigned corporation to file this prepared statement, to have it read into the record, and to have it considered as testimony given to the subcommittee during the hearings above referred to.

STATEMENT AS TO THE PRESENT CONDITION AND POSITION HELD BY THE SOUTHWEST OIL CO. IN THE STRATEGIC MINERALS INDUSTRY, WITH PARTICULAR REFERENCE TO THE CHROME SEGMENT THEREOF

The Southwest Oil Co. is a California corporation. At the present time its active activities are confined to the production of chrome ores and concentrates exclusively. It is presently operating the Joaquin chrome mill, located on White Creek, Fresno County, Calif., and will shortly operate as well, the Bonnell chrome mill, located approximately 4 miles southwest of the Joaquin chrome mill. It is presently mining the following mining properties in Fresno County, Calif., for chrome ores: Butler Estate No. 1, James-Corbett mine, and the Archer mines, in addition to holding leases on other mining properties in this area. At this time it is the largest producer of chrome ores and concentrates in the immediate central California area, and is one of the larger single producers under the pres-

ent program. Production of chrome ore and concentrates by the Southwest Oil Co. during the past 3 months have averaged 396 tons of concentrates per month having a value under the present program of approximately $36,000 per month. Production has been increasing at the rate of approximately 50 tons per month, and the Southwest Oil Co. presently has plans for tripling its average monthly production, depending of course, upon an adequate extension of the present Government purchasing program. In addition thereto the quality of the chrome and chrome concentrates produced by the Southwest Oil Co. is such that it believes that it is correct in saying that it is now one of the largest single producers of premium grade chrome in the United States.

PROPOSALS AND VIEWS OF THE SOUTHWEST OIL CO. REGARDING POSSIBLE EXTENSIONS TO THE PRESENT PROGRAM AND POSSIBLE NEW PROGRAMS

It is believed that under present conditions it is impossible for any chromite producer in the United States to compete upon the world market in the production of chromite. This is not due to any deficiencies in mining practices in the United States, but is due primarily to the low labor costs in foreign operations and the development of such foreign operations through the medium of United States foreign aid programs. Through the possible production of byproducts along with the production of chromite, it may be possible for this producer to compete favorably upon the world market, but it would require several years to develop these markets properly.

Therefore, the Southwest Oil Co. believes that it is safe to say that if there is no immediate program for a sale to the United States Government at approximately the present price offered by the Government, subject to comments as hereinafter expressed, that there will be absolutely no domestic production of chromite and the mines will be shut down. Since the United States produces only about 3 percent of its yearly needs domestically, and since the use of chromite is absolutely necessary and vital to its defense due to lack of proximity to the continental United States of other sources of supply, the continued domestic production of chrome is an absolute necessity. This point was established clearly in prior congressional investigations regarding strategic minerals.

It is felt that a continuation of a domestic chromite purchasing program is absolutely essential, and while other and better programs will be discussed hereafter, a base from which we can proceed would be an immediate extension of the present program as it now stands with several modifications. Clearly the producers of domestic chrome should have some assurance before investing large sums in expansion that the extension will be for sufficient time to enable them to plan ahead.

In order to more adequately develop the prospective chrome producing capacity of the Nation, however, it is felt that a new and long range program would be more advantageous. A 20-year program would result in the producer and the potential producer having sufficient time to allow for further orderly exploration and conventional development of new properties, which a shorter extension of the old program would not adequately allow. Any shorter period of time would result in the limitation of sufficient investment funds for exploration and improving mining and concentrating facilities necessary to have a complete and adequate development of all continental United States chrome-producing potentialities.

It is felt that while the problems presented by the chrome segment of the strategic minerals industry are peculiar unto themselves, that there is sufficient similarity between the problems of the chrome producer and producers of other strategic minerals that a new act could cover all of the strategic minerals. Inversely however, certain dissimilarities are such that a separate section of such a new bill should be dedicated to the chrome producer alone. The Southwest Oil Co. of course speaks only with authority in the field of chrome production. It is not familiar with the individual problems of the producers of other strategic minerals.

PARTICULAR PROBLEMS OF THE PRODUCER OF CHROME IN THE CENTRAL CALIFORNIA AREA AND THEIR RELATION TO THE CHROME PROGRAM AS SUCH AND TO THE STRATEGIC MINERALS PROGRAM AS A WHOLE

Due to the security classification placed upon the strategic minerals program, the undersigned does not have a complete and concise knowledge of the total amount of production under the present program. It does believe, however,

based upon conversations with other chrome producers and chrome carriers, that approximately 80 to 90 percent of the chrome ore and concentrates purchased at Grants Pass, Oreg., are presently being produced in the central California area. The Southwest Oil Co. is presently paying a monthly freight bill of between $5,000 and $6,000. In fairness to the producers of the great majority of the chrome produced under the present program, future programs should definitely give such producers relief from so high a freight burden. The small amount of Oregon producers are not paying anywhere near such high freight costs to ship to the depot at Grants Pass, Oreg. Accordingly the Government price allows for a higher net return per ton of chromite to Oregon producers than that which is obtained by California producers.

Actually, the Grants Pass, Oreg., chromite depot is nothing more than a sampling, acceptance, and transhipment point to the steel-producing areas of the United States, which was established initially at such a location due to the larger Oregon production of chromites at the inception of the first program, and does not, at this time, reflect a realistic approach to the situation. While this may presently be changed by administrative action, Congress should direct such a change in order to insure that such action is taken.

The most expeditious and convenient way of handling this problem would be to establish a Government chrome purchasing stockpiling depot in the central California area. The city of Coalinga, Calif., would be an admirable site for such a depot because of its central location, railroad head, road network pattern, and superior year-around weather for such a program. Under such a reestablishment of the stockpiling depot, central California producers would be benefited enormously at less cost to the Government, and the ends of the program as such would be more expeditiously accomplished.

Another possibility would be purchase by the Government f. o. b. the point of production (millsite), at a lower figure than the present price f. o. b. Government stockpiling depot. This would put all producers on an equal footing as regards transportation costs, and would result in a considerable saving to the Government. Reestablishment of the location of the stockpiling depot should still be accomplished under this possibility, since such reestablishment of location would result in a very considerable saving to the Government.

Still another argument in favor of the relocation of the stockpiling depot to a central California point is the inconvenience caused while shipping during the winter months due to the interruptions in shipments from central California to the Grants Pass, Oreg., depot due to winter rains and snow, and road closures caused thereby.

SUMMATION

In summation, immediate legislation extending a chromite purchasing program is an absolute necessity for the economic survival of the American domestic chrome industry. A long-term program should realistically take into account the major production center of chromite in the United States and problems which are peculiar to that area.

Statement of Clyde L. Flynn, Jr., Secretary of the Independent Fluorspar Producers Association, Elizabethtown, Ill., Before the Committee on Interior and Insular Affairs of the United States Senate on S. 3453

The domestic fluorspar industry produces metallurgical, ceramic, and acid grades of fluorspar. These products enter into all phases of our economic life and are essential to our national security. Both acid-grade and metallurgical-grade fluorspar are classified as strategic and critical by the Office of Defense Mobilization.

Metallurgical grade fluorspar is essential to the production of steel. No acceptable substitute has been found which will replace metallurgical grade fluorspar in the steelmaking process and experiments in this direction are not encouraging. Without acid-grade fluorspar there would be no aluminum industry. There is no substitute for acid-grade fluorspar in the aluminum producing process and as a matter of fact fluorspar serves as a substitute for cryolite in the aluminum process. Acid-grade fluorspar is as essential to the atomic energy program as uranium. Acid-grade fluorspar is the source of fluorine in our fluorine chemical industry; it is used in the production of fluorine chemicals, plastics, freon gas, and in the new fluoro-carbon chemical industry. Fluorspar enters into the pro-

duction of a host of other products essential for our day-to-day living. These are illustrated by paints, glass, enamelware, welding rods, and abrasives.

The consumption of fluorspar of all grades has risen steadily. Every ton of steel requires approximately 6 pounds of metallurgical grade fluorspar. Each ton of aluminum requires about 160 pounds of acid grade fluorspar. Of the estimated 1955 consumption of 550,000 tons of fluorspar approximately 240,000 tons was consumed by the steel industry, 245,000 tons went into the production of hydrofluoric acid which includes that consumed by the aluminum industry, and about 65,000 tons was consumed by the ceramic industry.

Forecast of expansion in the steel industry within the next 5 years shows an estimated increase in the consumption of metallurgical grade fluorspar of about 50 percent above present consumption. The aluminum industry seeks to expand to 2,250,000 tons by 1960 which will require approximately 175,000 tons of acid-grade fluorspar as contrasted with the present consumption of something like 110,000 tons. By deduction it appears that the consumption of acid-grade fluorspar by the uranium industry is in the order of 60,000 tons per year and will, we understand, be expanded to 200,000 tons in the next 5 years. The freon compounds, high octane gasolines and other industries see increased consumption ahead.

However, even with all of the consumers constantly increasing their consumption paradoxically the domestic fluorspar industry has all but ceased to exist.

Foreign imports virtually have taken over the domestic market, and unless prompt relief of some sort is furnished the domestic fluorspar industry, it will, for all practical purposes, go out of business.

Commercial imports in 1955 are estimated to be approximately 330,000 tons; an increase of nearly 120,000 tons over 1954, and 170,000 tons greater than 1951. It appears that commercial imports for 1955 will equal 60 percent of domestic consumption as against 32 percent in 1951.

Capacities far in excess of present commercial shipments exist abroad. Much of the production from these facilities is going into the national stockpile or into the supplemental stockpile under barter contracts.

Almost without exception, every foreign facility for the production of acid-grade fluorspar has been financed either directly or indirectly by the United States Government. One importer currently shipping to the United States Government material produced in a plant constructed with funds provided by a United States Government loan, is receiving $65 per ton for his acid-grade fluorspar as contrasted with $60 being paid by the Government to a domestic producer furnishing the identical material. This domestic producer constructed his plant at the urging of the United States Government with private capital, and is now confronted with the necessity of closing down in 90 days unless some relief is forthcoming.

Barter contracts have enabled foreign producers to expand their production facilities; in one case capacity for acid-grade fluorspar was increased from 2,500 tons per month to 7,500 tons per month.

Foreign capacity for the production of acid-grade fluorspar now equals 350,000 tons and can readily be expanded. This entire output, far in excess of domestic current requirements is or shortly will be available to domestic consumers at a price with which domestic producers cannot compete.

No accurate estimate of foreign capacity to produce metallurgical-grade fluorspar exists; industry examination of foreign properties leaves no doubt that Mexico alone without any difficulty can furnish far in excess of domestic requirements.

The domestic metallurgical fluorspar producers are greatly concerned with the announcement that metallurgical fluorspar will be obtained for the stockpile by barter. If this is done, we feel that it will have the same ultimate effect on the domestic producers as did the acid grade barter contracts, namely, as a direct result of obtaining the contracts the foreign producers will expand their facilities sufficiently to provide the material required for their barter commitments, and still retain their regular customers in the United States. Upon the completion of the barter contracts these expanded facilities will then dump their expanded output on our domestic market and thus completely destroy our producing industry.

Foreign producers have dominated the domestic market for several years. Through their low cost operations resulting principally from low wages they have reduced prices to the point where most domestic producers have been forced to close completely, and the rest may close shortly.

In a very short time all of the foreign production will be thrown on the domestic market. Then there will be no domestic fluorspar industry. It simply cannot compete with imports at imported prices.

Present tariffs on fluorspar are no barrier to imports. The rate is only $1.87 per short ton on acid-grade fluorspar, the higher valued product, and $7.50 per short ton on metallurgical-grade fluorspar, the lower valued product. One need but look at the increase in the rate of imports to recognize that this rate offers no obstacle to importers.

Increase in domestic consumption will not assist the domestic fluorspar industry. One domestic consumer has increased his consumption eightfold in the past few years, yet today he purchases his entire requirements from imports, solely because of price. Another consumer testified before the Tariff Commission that he had ceased to buy domestic acid-grade fluorspar and turned solely to imports only because of price. This action resulted in the closing of a western mill with a capacity of 40,000 tons per year. This acid-grade producer who was forced to close felt that he was confronted with an apparently hopeless competitive situation and as a direct result is currently dismantling and selling his mill.

Domestic capacity to produce acid-grade fluorspar is in excess of current consumption and can be expanded. Metallurgical producers could meet current consumption requirements, but not at a price competitive with imports.

But, domestic capacity can only be maintained if there is a market for the product. Today, the largest domestic producer of acid-grade fluorspar will close its two Colorado plants, one the first of October and the other by the end of December, unless there is some purchase program authorized or import protection afforded. One of the Illinois producers faces a shutdown within 30 days unless similar assistance is given. These plants have a combined capacity of approximately 76,000 tons per year, and 2 of them with 60,000 tons capacity were constructed solely because of the United States Government requests. In Kentucky, where formerly more than 50 percent of our metallurgical production was produced, not one metallurgical mine is in operation today. Metallurgical production in the Western States has all but ceased. Only Illinois and Montana are currently furnishing metallurgical grade fluorspar and this is in very limited amounts. No domestic producer can compete with imported prices.

The announcement by the Office of Defense Mobilization in August of 1954, instituting a stockpiling program for domestic metallurgical-grade fluorspar has resulted in contracts for approximately 10,000 tons of metallurgical-grade fluorspar or less than 5 percent of our domestic capacity. This program to stockpile domestic metallurgical-grade fluorspar has failed to benefit the industry solely because General Services Administration will only pay current market prices. These prices are and have been determined by imports for the past few years. Obviously, if the domestic producers could not sell on the open market at import prices they could not and should not be expected to sell to General Services Administration at the same prices. Producers have been advised that prices will be increased, but based on the background of our experience (this same promise was made to domestic producers 12 months ago) we have little reason to feel that this will be done.

Having been denied tariff relief (two tariff investigations covering fluorspar have been conducted within the past 2 years, pursuant to resolutions of the Committee on Finance of the United States Senate) and having been unable to get imports adjusted through our applications with the Office of Defense Mobilization under the provisions of the national security amendment, adopted by Congress during the last session, as an amendment to H. R. 1, the industry is now threatened with extinction. Only immediate action by Congress can save this vital domestic industry.

Congressional action limiting imports would allow the domestic industry to continue operations and would permit them to regain a part of the domestic market. From an overall long range view this type of relief would best serve the domestic industry.

As an alternative and as a temporary device, the industry can be assisted by a continuation of the purchase program for domestic acid-grade fluorspar. This program expired October 1 this year. To provide any worthwhile relief the program should provide for the purchase of not less than 100,000 tons annually of acid-grade fluorspar. This would permit the operation of about 75 percent of capacity of the mines which are closed or faced with the necessity of closing within the next 30 to 60 days. In order to be of benefit, the price would have to be near that being currently paid by General Services Administration for domestic acid-grade fluorspar with $57.50 per short ton being the minimum.

If the domestic metallurgical grade fluorspar producers are to be helped at all by the present stockpiling program, a price above the market price will have to be paid. A price at a level of $42 per 72½ percent effective, $40 for 70 percent effective, and $37.50 for 60 percent effective will be required.

PACIFIC NORTHWEST ALLOYS, INC.,
Spokane, Wash., June 1, 1956.

Hon. JAMES E. MURRAY,
Chairman, Minerals Materials and Fuels Subcommittee,
Senate Office Building, Washington, D. C.

DEAR SENATOR MURRAY: For the record I submit this report of our situation to indicate the type of relief that in our own case and that of others would keep a fair tonnage of domestic chromite moving directly to market without stockpiling and with a minimum outlay.

Our parent company, Pacific Northwest Alloys, Inc., of Spokane, Wash., will complete smelting to ferrochrome the chromite sand from United States Government stockpile No. 51 near Coquille, Oreg., within the next few months.

Plant facilities at Coquille represent an investment of some $300,000. A further $50,000 has been expended in drilling and blocking out sufficient similar ore reserves to permit continuation of the operation for many years. Output of the Coquille plant is in excess of 80 tons of chromite sand per day.

Continuation of the operation is impossible because a comparable grade of ore can be imported and delivered to Spokane at a cost about equal to the Coquille production cost; leaving this operation at only the freight differential disadvantage of $10.51 per ton of chromite sand shipped to Spokane. Accordingly this plant must be dismantled and plans for domestic ore production abandoned. All Oregon coast chrome ore is below grade on chrome-iron ratio to be acceptable at Grants Pass stockpile, hence it is necessary that our company process this low-grade ore through to finished ferrochrome alloy since the chrome concentrate as we produce it is neither salable to Grants Pass stockpile nor to the open market.

Contemplated ore development plans called for some $700,000 further investment with employment of 50 men in the Coquille area in addition to the Spokane plant employment. Output projected would be about 35,000 tons of domestic chromite per year. This plan must be abandoned for want of Government support for a domestic mineral policy.

Our continued operation does not depend on a high price stockpile purchase plan since we do process this ore to a very acceptable low carbon ferrochrome and market this directly to the steel industry.

Our Spokane plant is quite anxious to continue with the use of a low-grade domestic chrome concentrate such as we are producing here at Coquille, not only because of the material but in case of foreign import curtailment, but since they are competing in the sale of their fero-chrome alloys with other producers they cannot afford to pay more for their chrome ore than the lowest market price on usable ore.

Other chrome producers are rather similarly situated. In our case a production bonus of only $10.51 would keep this source of domestic ore open and in position for rapid expansion.

We commend the good work of your committee. We do urge very prompt action in establishing some long-range mineral program set up on a basis which will permit producers to find their own market if stockpiling is not warranted in your conclusions. Early action is necessary to hold present operations in production as no further development work can be justified on present limited stockpile buying time.

Without some such assistance the entire chrome mining industry and other mineral mines will shortly completely and permanently fold up, plants will be dismantled and a great many men will be thrown out of work with little chance of revival if ever necessary. This we believe a fair, reasonable and equitable request of our Government justified by precedent already established for relief of other similarly distressed segments of business and industry.

Very truly yours,

PACIFIC NORTHWEST ALLOYS, INC., COQUILLE DIVISION.
GEORGE E. MURPHY.

BOARD OF SUPERVISORS, GILA COUNTY, ARIZ.,
Globe, Ariz., April 10, 1956.

Hon. CARL HAYDEN,
United States Senator from Arizona,
Senate Office Building, Washington, D. C.

DEAR SENATOR HAYDEN: Enclosed please find a copy of a resolution passed and adopted on this date by the Gila County Board of Supervisors.

Thanking you in advance for your earnest consideration of this resolution, I am,

Very truly yours,

LOUISE C. ROTHENGATTER, *Clerk.*

RESOLUTION No. 55–4–2

Whereas there has been introduced in the United States Senate a bill known as Senate bill No. 3499, which is a bill to encourage the discovery, development and production of nonferrous chrysotile asbestos in the United States; and

Whereas Gila County, Ariz., produces a great portion of the nonferrous chrysotile asbestos mined in the United States; and

Whereas the stockpiling program promulgated by the United States for the preceding 2 years has resulted in the discovery of vast new deposits of asbestos in Gila County; and

Whereas hundreds of individuals both on the Indian reservation and in other parts of the county are employed in he mining of said chrysotile asbestos; and

Whereas asbestos is a vital material in the national defense effort; and

Whereas in the past the United States Government has obtained a great portion of its asbestos from foreign countires; and

Whereas in time of war the Russian submarine fleet would be a constant threat to the importation of said asbestos: Now, therefore, be it

Resolved by the Board of Supervisors of Gila County, sitting in special session on this 10th day of April 1956:

1. That all United States Senators and Congressman be requested and urged to use their utmost effort to have Senate bill No. 3499 activated into law; and

2. That a copy of this resolution be forwarded to each member of the Arizona congressional delegation.

Passed and adopted this 10th day of April 1956.

GILA COUNTY BOARD OF SUPERVISORS,
STEVE BRYANT, *Chairman.*
BEN G. ARMER, *Member.*

Attest:
[SEAL]

LOUISE C. ROTHENGATTER, *Clerk.*

HUMBOLDT COUNTY CHAMBER OF COMMERCE,
Winnemucca, Nev.

Whereas the economy of Humboldt County in the State of Nevada, has been beneficially affected by the production of tungsten within and near its boundaries since before World War I; and, since from that time, the production of tungsten within this area has so greatly increased that at the present time the area can be counted among the top producers of tungsten in the world; and

Whereas all of the people of Humboldt County, directly or indirectly, will be benefited by the continuance of this thriving industry; and

Whereas the people of Humboldt County will deplore the closing down of the tungsten mines in this area as the economy of the county has become vitally dependent upon them: Now, therefore, be it

Resolved by the Humboldt County Chamber of Commerce in its regular full membership meeting assembled, That the representatives of the People of the State of Nevada, to the Congress of the United States, be, and hereby are, respectfully memorialized to continue to exert the greatest possible effort to secure the passage of fair and just legislation which will extend the present Government tungsten-purchasing program for 3 years; and, to recognize the urgency with which such legislation must be passed; and, to provide for a long-range plan which will secure the production of this important metal to which the economy of many communities like ours has been geared for the benefit of national defense and war production and which can, with more time, become necessary to peaceful production; be it further

Resolved, That the Secretary transmit a copy of this resolution forthwith to the Honorable George Malone, Alan Bible, Cliff Young, and chairman of the House and Senate Interior Committees.

DONALD LEIGHTON,
Secretary.
RICHARD G. CAMPBELL,
President.

RENO, NEV., *March 28, 1956.*

Hon. JAMES E. MURRAY,
United States Senator, Washington, D. C.

DEAR SENATOR MURRAY: I am taking this means of expressing my sincere thanks and appreciation, not only for myself as a prospector and small producer of tungsten, but also for and on behalf of over 200 of my friends in California and Nevada who are in the tungsten industry. You certainly have been a champion for and on behalf of the mining industry, and your efforts on our behalf will never be forgotten.

We cannot understand the extravagances of the State Department in its efforts to have foreign tungsten brought into the United States based on slave wages and slave working conditions. Right here in Nevada we are paying $35 per foot for tunnel work, and as much as $100 per foot for shaft work on our tungsten prospects. I feel positive that there is not a foreign country in this world that pays as much as one-tenth as we do in the Western United States, and if it were not for your efforts in the past, we would have been out of business before now, and if you discontinue your efforts in the future, we will be out of business within the next 90 days and the tungsten industry will be dead. It is too bad that President Eisenhower cannot realize that the tungsten business, as of today, is on the precipice of becoming one of the largest in the mining industry, probably as large as copper or aluminum within the next 5 or 6 years, if it is given a breathing spell for the next few years. With a few more new uses, the demand will probably exceed the supply, but if the President sees fit to veto any favorable bill which may be passed in this session it will certainly spell the death of tungsten for many years to come.

Your name has figured prominently in recent press reports both in California and Nevada, and to say the least, the efforts which have been asserted on behalf of the mining industry have been fully set forth in these press releases, and all articles were extremely favorable to you. We in the industry know that you have deserved such favorable press reports and we appreciate it and are very grateful for everything you have done for us.

In closing, I do so wishing you the best of luck in everything in this world.

Sincerely yours,

ROBERT E. TAAFFE.

UNITED STATES SENATE,
COMMITTEE ON PUBLIC WORKS,
March 23, 1956.

Hon. JAMES E. MURRAY,
United States Senate,
Washington, D. C.

DEAR SENATOR MURRAY: Just a few days ago, I joined with you and others on an omnibus mining bill, which would revitalize the manganese industry among others. Today, I received a letter from Mr. L. J. Reynolds of the Reynolds Electrical & Engineering Co., Santa Fe., N. Mex., which said in part:

"The encouragement to the mining interests has been of far greater value to the Nation than just the ores produced; it has attracted both capital and labor to the field where vast previously unknown resources have been uncovered. Defensively this is highly important because we can better evaluate our potential to learn just how dependent we may or may not be. The amount of ores produced and sold under the stimulating programs is very low compared to the new deposits discovered because it takes so much time after discovery to prove up claims and attract the added capital to place them in production. Capital is reluctant to take a chance when the programs are of short duration.

"Often I note the view of Government officials that the Government is paying more domestically than necessary to pay on the foreign market. They seem to overlook the great added value of discovery, exploration and costly blocking out

of reserves which takes place in the effort to produce the subsidized ore. This is of greater value to the Nation than the product. It determines our degree of self-sufficiency for times of emergency. If we wait until the emergency comes we will be short of manpower and equipment to do the job, to say nothing of the extremely high cost of doing it under emergency conditions.

"During the 2 years we have been in the mining business we have invested in excess of $135,000 without the return of one cent. We have found vast reserves of strategic minerals that were previously unknown. Some of these discoveries are not only unrecorded on available geological maps, but occur where no mineralization was even indicated. We know many concerns who have had similar experiences. We are just now, after 2 years, getting into a favorable position to produce. These 2 years could be extremely critical in an emergency. They could mean success or failure of our defenses so that value to our Nation cannot be measured by the difference in cost between foreign and domestic ores."

Mr. Reynolds is one of the world's leading electrical engineers, is owner of a scientific development laboratory which built the fallout testing equipment used by the AEC in Nevada and many other items. So, when he says they have uncovered deposits unknown, it is probably true because of the use of the vast equipment he has at his control. I think this is typical of the effort, and type of men, which we have in our mining field today, and certainly we ought to give them every support we can.

Sincerely,

DENNIS CHAVEZ,
United States Senator.

REYNOLDS ELECTRICAL & ENGINEERING CO.,
Santa Fe, N. Mex., April 6, 1956.

Senator CARL HAYDEN,
Senate Office Building, Washington, D. C.

DEAR SENATOR HAYDEN: Senator Dennis Chavez has sent me a copy of your manganese bill S. 3523 and I am highly appreciative of your effort to assist the mining industry of the Southwest.

I feel that this is a bill to help the Nation in one of its serious defensive problems rather than a bill to help an industry; it makes it possible for the industry to be of greatest service.

Those who are not intimately acquainted with activities in the mining industry and the results obtained by subsidizing domestic production over the foreign markets are inclined to believe that our Nation is wasting our tax dollars. May I express my observations as a newcomer to the mining industry who has seen the good results, that you might have additional information to pass to those of no like experiences at all.

The ore produced is by no means the measure of benefit to the Nation, though this does, of course, enhance the economic condition of the areas on which we are highly dependent in times of emergency. The greatest benefit is the encouragement to capital and labor to prospect, explore and prove the value and extent of our mineral resources. If the Government had to pay for these long tireless hours which are devoted to this activity when inspired by personal gain, the cost would be tremendous in periods of emergency if any enemy were charitable enough to grant us the time.

It has taken already several years of precious time to discover and evaluate these resources and now just when some who have contributed much are ready to produce, the subsidy ends and they have no way to recover their investment. The resources they have uncovered have assured the Nation of at least a fighting chance to meet the manganese needs of an emergency; continuation of support will likely develop ample resources never before realized and never before evaluated. The geological maps do not, by any means, indicate all of the discoveries made by the process of economic subsidization and even when mineral deposits are indicated, the Bureau of Mines and other Government agencies doing the best of jobs cannot look beneath the surface to determine the extent and quality of ore bodies. There is only the hard way of work in the field which the subsidy accomplishes for a fraction of the cost of direct contract to explore.

Capital is reluctant to take a chance when the programs are of short duration and yet, in spite of this, a big job has been done. A program of longer duration will make us defensively strong. To await an emergency we will be faced with shortage of manpower and equipment—probably in the atomic era especially we will be short of time.

During the 2 years we have been in the industry we have expended more than $135,000 without the return of 1 cent. We have found vast reserves of strategic minerals that were previously unknown. We know of many concerns with similar experiences. Just as we were ready to ship manganese the Deming purchasing depot closed, necessitating an entirely new look and a new economic approach.

In the case of those who profit little or much, the Government is amply protected by taxation which, for a corporation and more for an individual, will return 52 percent of the subsidy. If none is returned through taxation it is very likely that the Government got a bargain in exploration work accomplished by the money spent.

The sensibleness of the program cannot be judged by a comparison of the foreign market cost with the Government domestic price. It is a complex problem involving not only defense but our future industrial needs in the rapidly growing demand for manganese. Competition in the world market for a single needed commodity could cripple our economy. We need to be as independent as possible—at least we should know exactly the degree of our independence in natural resources.

I trust that just one thought may add to those of others to assist you in the passage of S. 3523.

Yours very truly,

L. J. REYNOLDS.

ARIZONA SMALL MINE OPERATORS ASSOCIATION,
Tucson, Ariz.

Senator JAMES E. MURRAY,
Interior and Insular Affairs Committee,
Washington, D. C.

DEAR SENATOR MURRAY: The Tucson Council, Arizona Small Mine Operators Association is in full accord with S. 3453, a bill to aid certain strategic minerals now for consideration before your committee.

This legislation will be of great aid to the small mine operator, therefore, we kindly request, if you deem it advisable after due consideration, to give your commitee's approval to the proposed legislation.

Thanking you for your attention, I remain,

Respectfully yours,

ARTHUR W. JACOBS,
Secretary, Tucson Council, ASMOA.

KINGMAN MINES, INC.,
Cincinnati, Ohio, April 19, 1956.

SENATOR MURRAY,
Senate Office Building, Washington, D. C.

DEAR SENATOR MURRAY: As president of Kingman Mines, Inc., an incorporation for mining manganese in Cedartown, Ga. We organized 3 years ago and last year put in a recovery plant after considerable mapping out and proving of ore. We opened production last October and we are on the DMPA program and also selling low-grade manganese to different sources. We are getting out about 2 cars a month of over 40 percent manganese to the DMPA program.

We would like very much to add our word in favor of this bill for the recognition and assistance on production of manganese by small producers and to extend the time for the Government buying to at least 1961.

We have made considerable investment and feel that it will take at least until that time to get our money back out of it. We also feel that the home producer should be helped in every way possible and encouraged in the continuance of production of domestic manganese.

We have proven a very large reserve body of ore containing manganese which should last for many years if there is a good market.

Best wishes in this for the successful passing of this bill I am,

Very truly yours,

GEO. WM. MCCLURE,
President, Kingman Mines, Inc.

ANACONDA, MONT., *April 17, 1956.*

The Hon. JAMES MURRAY,
The United States Senate, Washington, D. C.

DEAR SENATOR MURRAY: I am part owner of tungsten property, and do trust that you will do your best to protect the citizens of Montana, and help promote and preserve the mining spirit of our country, by putting up a firm fight to curb foreign tungsten, and thereby holding the price so we can afford to operate our mines. I am,

Very truly yours,

LARRY A. MCLANE.

STATEMENT OF B. PREGEL, PRESIDENT, COLD SPRING TUNGSTEN, INC., DENVER, COLO.

The production of tungsten, in the United States, is rapidly advancing to a critical point which may reduce it to practically nothing. It is my impression that we have to clarify our minds, once and for all, before the irreparable is done. Hereafter, I will try to lay down certain well-known facts in order to show the general picture.

1. The present technology, including the atomic energy technology, is based primarily on high temperature alloys.

2. The development of these technologies is only in its infancy and this is the reason why, for the moment being, there are no spectacular quantities of tungsten in use, but, from now on the development will advance in a geometrical progression.

3. There is no real substitute for tungsten. The replacements which were dictated by the lack of adequate supplies are not satisfactory as the unique qualities of tungsten could not be duplicated.

4. The use of substitutes might put the United States in a position where the new equipment for military as well as for civilian uses would be disastrous for our country.

5. The apparent abundance of stocks of tungsten in the United States is not real because the appreciation of the magnitude of a stock is always conditional and depends on the rate of consumption and, as explained before, this consumption is bound to rise manyfold in the near future, so that this apparent abundance may become a dangerous scarcity.

6. Although tungsten is produced in many countries of the world which, for the moment being, are ready to sell to the United States, this situation may change suddenly for the two following reasons:

(*a*) The first one is that many of the tungsten-producing countries are behind the Iron Curtain and may, for political reasons, be obliged to deliver their production elsewhere; and,

(*b*) The second is that the general progress everywhere will create a competition for this tungsten and, even the producing countries may use a part for their own needs.

7. Under the circumstances, it would be unforgivable not to maintain alive the domestic production. It is true that most of the United States mines are marginal mines and cannot exist without some kind of a subsidy, but, the importance of the tungsten industry is such that money appropriation is fully justified.

8. The decision must be immediate, as mines are closing now or are on the verge of closing in a couple of weeks. It would be costlier to revive the production, to reopen water-filled mines, and to rehire specialists and miners than to maintain it on a going basis and what is more important, in case of noncontinuance, is that a lapse of time of a certain magnitude will be lost before abandoned mines will be brought back to production.

LAW OFFICE OF J. B. C. KNIGHT

ANACONDA MONT., *April 17, 1956.*

Hon. JAMES MURRAY,
United States Senate,
Washington, D. C.

DEAR SIR: Our office represents one of the several mining enterprises in this area; namely, the Anaconda Tungsten Corp. This corporation is comprised of three individuals whose greatest asset is a sincere desire to develop several

promising tungsten claims. The tangible assets are few and the incorporators are family men who are citizens and residents of Anaconda. They are, therefore, interested in having Government-price support of the price of tungsten continued.

The tungsten claims are west of Anaconda and show great promise. An extension of the tungsten price support would encourage the development of this area and help our community to grow.

It is also our understanding that tungsten is still a critical item. Your support of pending legislation to extend Government support of the tungsten market price would be of service to our community and of encouragement to those who have claims to continue their efforts to develop the said claims. Anything that you can do will be appreciated and will be remembered by all concerned.

Sincerely yours,

WADE J. DAHOOD.

STATEMENT OF RALPH R. LANGLEY, LOS ANGELES, CALIF.

Since I am not in position to personally attend the hearings of your subcommittee on the 19th and 20th of this month, I submit herewith my views on the subject of manganese.

The bills now pending in the Senate, designed to stimulate the production of certain critical and strategic minerals and metals, provide primarily for subsidizing the production of those ores by the payment of premium prices or bonuses.

I am not sufficiently informed regarding the other ores listed in those bills to justify comment thereon, therefore my comments herein are directed exclusively to the manganese situation.

As to manganese, we now have more than 1,250,000 tons of low-grade ore in stockpile, at a cost to the Government of an estimated $50 million which can never be regained, which ore is of no use to the Government or to private industry unless and until it is upgraded into a useful concentrate and then smelted into ferromanganese.

At least one process of upgrading into a high-grade concentrate has been proven effective and economical. Smelting the concentrate into ferromanganese is a well-established procedure.

Encourage domestic industry.—Would it not seem more wise and realistic for a Government agency to encourage and possibly support the building of the necessary full-scale operation facilities for converting low-grade ores, whether from stockpiles or from our great low-grade reserves, into marketable products than to continue building up great accumulations of unusable material at great cost to our Government, particularly when such results can be accomplished at a profit, without any subsidy or bonus for the production of the ore.

I have been in the base metal and manganese mining business for many years. I have made a realistic study of the manganese situation in recent years, the objective being to become active in organizing the building of a strong domestic manganese industry, from mine to ferromanganese, which I believe was and is one of the primary objectives of the Congress.

As a result of negotiations with responsible interested entities strong enough to establish such an industry, I am convinced that continuing to subsidize manganese ore production will deter and possibly defeat that objective rather than encourage it, hence these comments, to wit:

Cost of domestic production versus foreign ore market prices.—The current price being paid by domestic consumers for natural foreign ores is about $1.25 per unit, plus an import duty of 5.6 cents per unit. Whereas the cost of producing a better grade of material from our large reserves of low-grade ores, in the State of Maine for example, would be about $1 per unit if produced and processed in economic volume by experienced operators strong enough financially to accomplish the objective.

Such production cost—$1 per unit—includes the cost of mining, local handling of the ore and product and the cost of leaching out and concentrating the manganese metal into a high-grade concentrate for use in making dry cell batteries and for chemical uses. Included in that cost is a liberal overhead estimate and amortization of the cost of facilities.

The cost of producing a ton of the same products from the stockpile ores at Wenden, Deming, and El Paso will be about $1 per ton of concentrate higher than at the large reserves in Maine and South Dakota even before paying GSA

anything for the ore. This is due to the cost of handling the ore in the stockpiles and to the freight charges from two of the piles to the third.

The concentrate is a preferred material for smelting into a premium grade ferromanganese. at an added cost of about $80 per ton of product, or at an overall cost of about $140 per ton of ferromanganese.

Profit motive.—The competitive market prices for the finished products afford ample margin of profit for an operator interested in long-range sound industrial operations.

Some of our ore reserves.—Reserves in the State of Maine are estimated at 300 million tons of 11 percent manganese content ore which could be leached and concentrated into 46 million tons of battery chemical grade concentrate which concentrate could be smelted into 25 million tons of premium grade ferromanganese.

South Dakota reserves are estimated at 2,500 million tons of low-grade ore from which it is estimated that 1 billion tons of better than 10 percent manganese content ore can be economically selected, which could be converted into 140 million tons of battery chemical grade concentrate which in turn could be smelted into 80 million tons of premium grade ferromanganese.

In the Wenden, Deming, and El Paso stockpiles there are about 1 million tons of average 27 percent manganese content ore which can be upgraded into 400,000 tons of high grade concentrate which concentrate can be smelted into 25 million tons of premium grade ferromanganese.

Other great reserves are located in other States. Since the domestic consumption of ferromanganese in 1955 was 925,000 tons, the above indicated production of that product would, at the same rate of consumption, supply our domestic requirements for more than 130 years.

The above-stated costs of production have been well considered by experienced competent chemists, metallurgists and seasoned operators and can be conclusively proven.

Capital required.—Capital required for minimum capacity facilities for the production of marketable products at each location will be about $3,500,000.

Domestic industry can be presently established.—Responsible entities in position to finance and establish such a new industry are interested in doing so provided a satisfactory arrangement is made with GSA-ODM for protection against dumping the stockpile ores on the market and provided no subsidies are authorized—this latter for the reason that subsidized prices for the production of ores will have the effect of increasing the cost of production of marketable products thus giving imported natural ores a protected advantage over a domestic industry.

New legislation.—I submit that if any new manganese legislation is enacted it should direct GSA–ODM to dispose of the stockpile ores to a responsible entity, who is willing to make the necessary investment and take the usual business risk in the establishment of such a nationwide industry—and it should authorize some Government agency to loan up to perhaps $5 million to such an entity—repayable out of normal operations.

The amount of such a loan would be a mere fraction of the amount the Government agencies would be obliged to pay out for subsidies—under any of the bills listed herein—and none of such subsidy money would ever be regained.

I suggest that all provisions with respect to manganese be omitted from the pending bills and that the authors of those bills join in the introduction of a bill directing GSA–ODM to dispose of the ores now in stockpile to a responsible operator on terms and conditions which will aid in the establishment of a long-range domestic manganese industry and authorizing and directing some Government agency to make funds available to such an operator, not as a subsidy but as a repayable loan, to aid in the establishing of such an industry.

ANACONDA, MONT., *April 16, 1956.*

Hon. JAMES E. MURRAY,
The United States Senate, Washington, D. C.

DEAR SENATOR MURRAY: We are citizens and owners of tungsten mining claims in this area and consequently are interested in pending legislation to continue the present Government support of the price of tungsten.

Neither of us has any large holdings and, in fact, we are gainfully employed in other capacities. However, we feel the encouragement of tungsten mining through Government price support will aid in the growth and progress of this part of our State and provide a greater field of employment.

It certainly seems to us that such continued price support by the Government will substantially aid in our defense. We are informed that tungsten is necessary to the production of high-powered jet airplanes as well as being necessary for certain civilian uses.

This matter of a Government program to continue a domestic price support of tungsten is a frequent topic of discussion in this area by mining and nonmining men. It seems to all of us that it is unfair to continue supporting foreign tungsten production without doing the same for domestic tungsten.

We trust that our views as contained in this letter will serve to assist you in determining the feeling in Montana concerning a program of continued support for tungsten prices.

Very truly yours,

HORACE GARRITY,
BEN GARRITY.

ANACONDA, MONT., *April 18, 1956.*

HON. JAMES E. MURRAY.,
The United States Senate, Washington, D. C.

DEAR SENATOR MURRAY: We are owners of tungsten mining claims in this area, and are interested in the pending legislation to continue the present Government support of the price of tungsten.

We feel that continued price support by the Government will aid in our defense. We also feel, it will keep up the encouragement of tungsten mining, which will aid in the growth and progress of our State and provide a greater field of employment.

Very truly yours,

OLIN MILLER,
FLOYD MILLER,
GENE MILLER.

STATEMENT OF GRACE YI HSU REPRESENTING THE MANAGEMENT OF THE STANDARD TUNGSTEN CORP. OF BENSEN, ARIZ.

The statement I am about to make is in reference to bill S. 3379, proposed by the distinguished chairman of the committee, Hon. Mr. Murray and the distinguished members of the committee, Hon. Mr. Bible, Mr. Ervin, Mr. Goldwater, Mr. Malone, and Mr. Scott, now before the committee. After listening to the enlightening statements made by the distinguished leaders of our industry—Mr. K. C. Li, chairman of Wah Chang Corp., New York, Mr. Charles R. Segerstrom, Jr,. of Nevada-Massachusetts Co., California, and Mr. Ray Sullivan of Minerals Engineering Co., of Colorado, Mr. W. Lunsford Long, of the Tungsten Mining Corp., and the encouraging comments made by the distinguished members of the committee yesterday and today I find that I have little to add to their reports and analysis on the general condition and outlook of the domestic tungsten mining industry except that I agree with their conclusions that unless some immediate legislative action is taken during the current session of the Congress to sustain produciton, the presently producing mines in this country would close or be destroyed or rendered incapable of being reopened except at extremely high cost, upon termination of the tungsten purchase program established pursuant to the Defense Production Act of 1950, as amended.

The Standard Tungsten Corp. was founded during the Korean war era when a critical shortage of tungsten ore in the domestic market became evident. Today the mining property holdings by Standard Tungsten under assignment amount to some 3,120 acres and the rate of production of tungsten concentrate has increased from under 2,000 pounds in October 1953 to an estimated 25,100 pounds during the first quarter of the current year; nevertheless we cannot claim to have surpassed the development stage of our young corporation. Ever since 1953 the entire tungsten production of our mines has been purchased by the Emergency Procurement Service of the General Service Administration under the Defense Production Act of 1950.

Mr. Chairman, may I respectfully state to the committee that unless some action is taken to sustain the production of tungsten ores and concentrates from mines within the United States upon the termination of the tungsten purchase program now in force, there is a great possibility that our mines would be forced to cease operations.

For these reasons, Mr. Chairman, may I respectfully express our earnest and full support of the bill, S. 3379, now before the committee and sincere hope that the Senate would give it favorable consideration. Thank you.

DEMING, N. MEX., *May 6, 1956.*

Hon. DENNIS CHAVEZ,
New Mexico Senator, Washington, D. C.

DEAR SENATOR CHAVEZ: I understand there is a bill before Congress regarding the manganese mining in this country and this State. We people of this part of New Mexico would appreciate your pushing this bill to the utmost.

To give you an idea what the manganese mining means to New Mexico, just from one mine (Lake Valley, N. Mex., which closed operation over 5 months ago) there were men working from Truth or Consequences, Hillsboro, Hatch, Deming, Bayard, Hurley, Silver City, and various other places, as well as the vicinity of Lake Valley. This part of the State is in a drought condition and many of the small ranchers worked at this mine, and it helped the country in general. They could pay their taxes, buy feed for cattle and not be forced to take drought relief feed for their cattle, which helps the morale of people.

The majority of men from these towns who worked at this one mine (and I've talked to a lot of them) haven't had work in the 5 months this mine has shut down operations. All are anxious for operations to start. As it is most of them have been drawing workmen's compensation and probably later will be on welfare. This is a great expense to the Government, and I can't see buying foreign manganese cheaper and paying the difference in compensation and relief.

The businessmen in these towns will tell you this one mine helped them a lot, and they are anxious for operations to start. It helped lots of people in this part of the State, and people had rather have work, rather develop New Mexico manganese, not have to draw workmen's compensation and be on relief rolls while the good old U. S. A. uses cheaper ores from foreign countries. I am sure this sentiment prevails throughout our State and elsewhere where there is manganese mining. I have lived right here within 8 miles of Lake Valley for the past 30 years and can say this one manganese mine has helped this part of the State more than any project in the past 30 years. So I urge you to do all in your power to get manganese. We have plenty without buying foreign manganese. Why not develop our own, spend our money at home?

Your every effort to get such bill passed and our manganese mines in operation will be appreciated. Thanking you, I am

Yours truly,

O. H. FRANKS.

EARL R. PILGRIM & CO.,
Stampede, Alaska, May 9, 1956.

Hon. JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
United States Senate, Washington, D. C.

DEAR SENATOR MURRAY: Mr. E. L. Bartlett, Delegate from Alaska, informed me by letter dated April 25 and only received here today, about S. 3496 and that the Senate hearings would be held open for about 10 days. Therefore this letter will probably arrive too late to be of any use, but we shall send it along in the hopes that it may be of some help.

The Stampede mine is the second largest antimony mine in production in the Nation. We started operating this mine in 1936 when there was no evidence of a war at hand. Its greatest production was during peace. It was originally planned and still is hoped to be able to operate in peaceful times.

Being able to operate in peace means that it is also available in an emergency and should be kept ready for an emergency by operating even if only on a small scale. An underground mine, to be kept in readiness for operation, must be worked since timbers rot, stopes and other workings cave.

We note that bill S. 3496 calls for "10,000 short tons of domestically produced metallic antimony and/or antimony oxide."

At present there is only one antimony smelter in the United States treating ores and making primary antimony. That smelter is the National Lead smelter in Laredo, Tex., which was built to treat oxidized Mexican ores and which will

not smelt high sulfide such as Alaskan or other Northern States ores are. The Bradley Mining Co. smelter in Idaho, as you know, has been closed down for some 3½ years. This plant makes antimony oxide, but I understand could make metal, but whether they would be willing to treat ores from other sources such as Stampede I do not know. There are many secondary smelters resmelting scrap battery lead and antimonial lead material, but none of these make refined antimony metal which would be suitable for stockpiling.

It seems to the writer that this bill would better serve the purpose intended if it included with antimony metal and oxide the stockpiling of ores as well. In case of war both sulfides and oxidized ores could be used in the secondary smelters when needed while the sulfides would be available for making oxides.

The way S. 3496 appears to me, if passed as is, it will have little benefit to most United States antimony, including Alaska, except for the one company owning their own smelter. Bradley Mining Co. is a fine company controlled by very fine people but unless they would be willing to purchase or smelt ores for say, Stampede, we would not be able to sell a pound of antimony for this stockpile.

We would hardly be justified in installing a smelter here in Alaska just for this purpose. I suggest that this committee, if possible, consult with the Bradley Mining Co. people about the above and also as to stockpiling of ores as is done in the case of numerous other ores.

Last month we shipped an initial lot of Stampede ore to Kobe, Japan, and now have another tentative order for another batch. It is rather paradoxical that we must ship our very high grade ores some 7,000 miles out of the country so that Bolivia, South Africa, and Czechoslovakia may ship low grade ores into the United States.

Very sincerely yours,

EARL R. PILGRIM.

DEMING, N. MEX., *May 7, 1956.*

HON. CLINTON P. ANDERSON,
United States Senate,
Washington, D. C.

DEAR SENATOR ANDERSON: The undersigned, residents of the States of New Mexico, Arizona, Texas, and Oklahoma, and all active producers of manganese under the recently completed low-grade stockpile program at Deming, N. Mex., deeply appreciate your cooperation in submitting the following statement for inclusion in the record of the hearings held before the Minerals Subcommittee on S. 3453:

"The unexpectedly premature closing of the low-grade manganese purchase program at the Deming, New Mex., depot on November 30, 1955, upon the purchase of the minimum tonnage specified in the law passed by the Congress of the United States and over 2½ years before the date set for expiration of this program has resulted in putting out of business many hundreds of small shippers and miners whom the program was instituted to assist in the production of the manganese so vital to the safety of this Nation, and for which we are now dependent upon foreign sources for some 90 percent of our needs.

"Whereas there were several hundred small individual miners and shippers producing manganese under the low-grade program, there are now only two shipping regularly under the carload lot program from the Deming area. Higher requirements of a minimum of 40 percent manganese and rejection of manganese containing 1 percent or over of combined base metals, have made it impossible for 99 percent of the small miners and mines to ship under the carload lot program. Such small producers lack the means and funds to set up beneficiation plants enabling them to upgrade their ore to meet the minimum 40-percent Mn requirement, thus losing the entire investment in mines and mining equipment which they have already committed. Even where in several cases sufficient capital investment has been put into beneficiation plants upgrading manganese ores to the 40 percent requirement, the restriction of a maximum of 1 percent combined base metals has made it impossible for the organizations which had shipped regularly to the stockpile for the past few years to continue shipping under the carload lot program.

"Extreme disparities in assays of such base metals, ranging in 1 instance from 0.9 percent Cu to 0.15 percent Cu, and in another from 0.67 percent Pb to

plus 2 percent Pb, and insistance by General Services Administration that at least 10 carloads must be shipped and accepted before 2 or more cars can be weighted in averages to meet specifications, are making it impossible for former regular shippers to the Deming stockpile to continue shipping under the carload lot program.

"We therefore urge that Senate 3453 be passed; and that shippers be permitted to weight any 2 or more carload lots, without having to ship a minimum 10 carloads before being allowed to weight their cars to meet specifications; and that the apparently excessive restrictions of a maximum of 1 percent combined base metals be relaxed as far as metallurgically possible; and that some standardization of assays be adopted for the carload lot program; and that the Government immediately begin the construction of 1 or more beneficiation plants to handle the small producers' low-grade ores."

Sincerely yours,

A. R. Morehead, Amarillo, Tex.; L. Yacomo, Lordsburg, N. Mex.; H. L. King, Deming; Laurence Hammond, Deming, N. Mex.; Chris Muller, Willcox, Ariz.; P. L. Grattan, El Paso, Tex.; Juan and Marcus Pacheco, Deming, N. Mex.; Geo. A. Dowdler, Deming Mines, Inc.; Ladislado Elizalde, Deming, N. Mex.; Antonio Cristo, Deming, N. Mex.; Finley Dimagan, Deming, N. Mex.; Joe C. Archulilo, Deming, N. Mex.; Jose Castro, Las Cruces, N. Mex.; R. B. Clark; A. G. Griffin; C. L. Getman, Amarillo, Tex.; O. G. Griffin, Deming, N. Mex.; Karl Strand, Silver City, N. Mex.; Holm Bursum, Socorro ,N. Mex.; John J. Emmons, Pioneer Construction Co., Socorro, N. Mex.; L. Yacone, Lordsburg, N. Mex.; L. F. Gout, Black Canyon Mine, Socorro, N. Mex.; Ray C. Wood, Wood Mining Co., Albuquerque; Ben Rogers, Alpine, Tex.; E. B. Hughes, Socorro, N. Mex.; Eugene Bruell, Bear Mountain Manganese, Silver City; O. L. Neyland, Del Rio, Tex.; D. W. Rowe, Del Rio, Tex.; Keith Clark, Amarillo, Tex.; Milton Benjamin, Deming, N. Mex.; W. P. Birchfield, Deming, N. Mex.; Clarence Barrett, Socorro, N. Mex.; Tom Scartaccini, Albuquerque, N. Mex.; Rolph E. Proy, Socorro Custom Milling Co., Socorro Assay Laboratory; Rufus Little, Central Mining, Hatch, N. Mex.

STATEMENT OF STATE OF OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES, PORTLAND

OREGON CHROMITE

Ore and concentrates delivered to GSA stockpile at Grants Pass from deposits in Oregon only [1]

Year	Short tons	Cumulative	Long tons	Cumulative
1951	754	754	673	673
1952	6,591	7,345	5,885	6,558
1953	6,216	13,561	5,550	12,108
1954	6,665	20,226	5,951	18,059
1955	5,000	25,226	4,465	22,524

Number of producing mines in State in 1955	20
Number of producing mills in State in 1955	17
Estimated number of men employed directly in chromite production in 1955	100
Estimated number of men employed indirectly in chromite production in 1955	[2] 300
Approximate number of known mines in State (active and inactive)	50
Approximate number of known prospects in State (active and inactive)	400
Approximate number of assays for chromium run by Department since 1951	3,200

[1] Source: U. S. Bureau of Mines Mineral Industry Surveys (area reports for each year).
[2] Based on U. S. B. M. "Oregon 1954" summary.

CHROMITE

By F. W. Libbey [1]

According to a preliminary report of the United States Bureau of Mines, domestic metallurgical-grade chromite produced in 1955 was as follows:

	Short tons	Value
California	22,500	$1,800,000
Oregon	5,000	400,000
Alaska	7,067	552,000
Total	34,567	2,752,000

In addition, Montana produced 108,000 short tons of low-grade concentrates which were sold to the Government under a special contract.

Shippers to the Grants Pass depot totaled 108, of which 62 were in California, 45 in Oregon, and 1 in Alaska. There were 23 active concentrating mills in California and 10, all small, in Oregon.

A plant built by Pacific Northwest Alloys, Inc., produced concentrates of chromite, ilmenite, magnetite, garnet, and zircon by electrostatic methods from the chromite sand stockpile of the old Defense Plant Corporation near Coquille, Coos County. Another plant, designed to recover a high-grade chrome product from "black sands," was built near the Seven Devils road about 8 miles north of Bandon, Coos County, by the Mineral Sands Co. and is scheduled to get into operation in 1956.

As reported by the Federal Register, up to September 30, 1955, the Government had purchased 93,985 long tons of chromite under the 1951 purchase program. By the end of 1955 this amount would be increased to more than 50 percent of that authorized (200,000 long tons). The program is scheduled to end June 30, 1957.

Consumption of chromite for the first 10 months of 1955 was:

	Short tons
Metallurgical grade	777,553
Refractory grade	349,553
Chemical grade	130,721
Total	1,257,827

If this amount is prorated for the full year the total would be approximately 1½ million tons.

Chrome is a vital war material and imports on which this country depends would surely be cut off by a hot war. Otherwise the domestic producer could be written off as an economic casualty and forgotten. If he is, we are subject to the same liability as in World War I, World War II, and at the beginning of the Korean war when, each time, those in authority suddenly realized that domestic chrome production was needed immediately. People who have been close to the picture in the past know that maintaining a live producing industry, even though small but ready to expand, would be cheap insurance against the possibility of a frightening shortage. Also, such an industry would be part of a sound mobilization base.

Official delegates of the governors of Western States and Alaska, meeting in Sacramento November 7–9, 1955, advised their respective governors to seek adequate tariffs as a long-range policy to stabilize and insure survival of some segments of the mining industry. A minimum tariff for chrome of five-eighths cent a pound of contained chromium in imported ore was recommended, with proceeds of the tariff to be distributed to domestic producers in proportion to their production. Until some such long-range assistance program can be set up the delegates recommended that the Government purchase program be continued.

Although little incentive for long-range exploration of chromite ore bodies was offered by the Government purchase program, more metallurgical-grade ore is known to occur in California and Oregon now than when the program started. Some substantial new ore bodies have been found and new knowledge of chromite ore emplacement has been gained. Over the past 3 years the Oregon Department of Geology and Mineral Industries has been carrying on studies of structure of serpentinized peridotite in ore zones and will issue a preliminary report in 1956.

[1] Mining engineer, formerly director of Oregon Department of Geology and Mineral Indutries.

ALASKA METALS MINING CO., INC.,
Fairbanks, Alaska, May 2, 1956.

Senator JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
United States Senate, Washington, D. C.

DEAR SENATOR MURRAY AND COMMITTEE MEMBERS: In answer to a letter we sent to Mr. E. L. Bartlett, Delegate from Alaska, we have been informed about the bill S. 3379, which has been introduced by you and other Senators. And since Mr. Bartlett has made our letter available to you and other members of the Subcommittee on Minerals, Materials, and Fuels, there is no need to repeat what I have already said about our situation. I will only submit such additional general information as will bear on why we feel there should be continued support for the tungsten mining industry. It may be that what I'm going to say, has been said many times concerning tungsten and other minerals too, but much emphasis is not amiss when one's back is against the wall and there is a valid need to correct a situation that is developing.

In considering that the increased use of tungsten has more than doubled in 1955 over 1954, and with the many added research programs getting underway for new and more uses for tungsten alloys, a drastic curtailment in the production of tungsten could well develop into another critical tungsten shortage in the near future. This would only again make it necessary to completely reorganize some sort of a program to correct the situation.

And in contemplating on the many needs that only tungsten can meet because of its unique physical characteristics, it is readily understandable why it is invaluable to our continued progress in industry and to the whole economy and progress of our country. A plentiful supply of tungsten will certainly help speed up many improvements in metallurgy.

A continued advance in efficiency of our high thermal engines such as rocket, jet, and nuclear engines and associated machinery will depend a great deal on the use of new tungsten alloys. There are innumerable instances of situations where the use of tungsten would greatly improve present-day products if a continued supply could be assured to warrant the change.

Another incentive, for continued assistance, for developing mining resources in this district particularly, is that most of all the income in the Fairbanks district is from taxpayers' money, in the form of Government defense spending. Any type of natural mineral resource development would be a great benefit to help stabilize this district as well as help encourage mining in the Territory of Alaska.

The bill S. 3379 is an excellent and direct solution for correcting the situation that is threatening the tungsten mining industry at present. It will also safeguard our Government's DMEA chance of getting its exploration money back where a discovery has been made. I imagine we are not the only party that hopes every Senator will become well acquainted with the mining industry's problems, and do their utmost to correct them.

Sincerely yours,

ALASKA METALS MINING CO.,
By ELMER STOHL, *President.*

UNITED STATES SENATE,
COMMITTEE ON PUBLIC WORKS,
May 12, 1956.

Hon. JAMES MURRAY,
United States Senate,
Washington, D. C.

DEAR SENATOR MURRAY: Mr. V. M. Ryan, executive vice president of Florida Manganese, Inc., Deming, N. Mex., has telegraphed me as follows:

"We urge your insistence on the passage of Senate bill 3636, reextension of carlot program; we feel that this is not adequate to stimulate the reopening of many small mines and consequent increase in employment but it will at least give producers time to develop new mines and enact long-range program pending legislation to reestablish low-grade program.—Florida Manganese, Inc., V. M. Ryan."

When hearings are resumed next Wednesday of next week, I would appreciate the telegram being made a part of the proceedings. I think such inclusion and publication of these expressions are useful to us for future reference on legis-

lation and an indication of general feeling in the United States even if the administration seems to feel differently.

Sincerely,

DENNIS CHAVEZ,
United States Senator.

STATEMENT OF V. M. RYAN, EXECUTIVE VICE PRESIDENT, FLORIDA MANGANESE, INC., DEMING, N. MEX.

In view of the fact that this country produces only 10 percent of its consumption of manganese ore it would appear that it behooves the Congress to pass forthwith the legislation that will enable this country to approach, at least, self-sufficiency in the production of this tremendously critical commodity. Some of the foreign countries now supplying the greater percentage of our needs do not appear to have governments that are sufficiently stable to insure us of continued uninterrupted supply at this time, not to mention what the situation would be like in time of emergency. In addition to the above this manganese ore arrives in this country after a very long sea haul, which again would jeopardize the entire steel industry in time of emergency.

Ten years ago no one thought that this country would be self-sufficient in tungsten and just as sure as this situation was overcome, and just as sure as this country had advanced tremendously in beneficiating low-grade copper and iron ores we can overcome our "have not" position with regard to manganese, if given the proper incentive by Congress, with due regard for the differential in labor costs here and in foreign countries. The difference in costs generally being made up by increased employment and in the many taxes the Government receives in return for increased production. In any event the added cost for domestic supply is relatively small when self-sufficiency for this country in the production of this critical material is at stake.

In our own small operation at Deming we have spent a very sizable amount of money in the rehabilitation of our plant and in our development work in order to meet the specifications of the carlot program and we are gradually increasing our production to reach a maximum production of 50 tons of concentrate of specification grade per day. The fact remains that we could triple our anticipated maximum production under present regulations, if the Deming depot were reopened. The result of closing the Deming purchasing depot for the purchase of low-grade ore, has been to close nearly all the mines in this area. In addition to our own increased production there would be a very sharp and substantial increase in the area production and perhaps as many as 500 new men would be employed. While I am not qualified to speak for the other New Mexico manganese areas I am sure that there would be a substantial increase in both manganese production and employment. Considerable has been said about the white elephant aspects of the present low-grade stockpiles, both at Deming and at Wenden. This company does not consider the metallurgy involved to upgrade this ore to specification grade as difficult at all, and this company further stands ready to negotiate a contract with the Government for the beneficiation of the manganese in the Deming stockpile, at any time.

We respectfully request therefore that your committee take cognizance that this country is in dire need of increased production in manganese to close the gap between our needs and our production, and to get away from our reliance on foreign countries. Suitable legislation has already been prepared in the form of bill 3523 and other bills and we sincerely hope that Congress, through your efforts, will see to it to pass this legislation.

(Whereupon, at 11:55 a. m., the hearing was concluded and the committee went into executive session.)

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